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OUR attention has been called, in connection with our recent comment upon the subdivision of engineering courses introduced at the Massachusetts Institute of Technology, to the still earlier adoption of a similar plan by Prof. R. H. THURSTON, in the reorganization of Sibley College, Cornell University, eighteen months ago. The last register of Cornell University gives the system in full, showing that it obtains also in the department of Professor FUERTES. While we may have given to the Massachusetts school undue credit for novelty in the general idea, our words of praise for the thing itself do not need to be retracted or modified. Professor THURSTON says of it, in a pithy paradox, "It is the only way, so far as I can see, of accomplishing maximum work in minimum time."

THE question of "the cost and manufacture of coke" has received a further contribution from Mr. FULTON. The important points that were raised by Mr. KOERNER, and which we desire to see discussed for the benefit of the iron industry, are:

1st. The advantages of washing coal before coking.

2d. The loss of carbon in coking by different systems.

3d. The cost of coking by different systems, including cost of plant, repairs, labor, value of by-products, etc.

4th. The quality of the coke made in each kind of oven.

Thus far, the discussion has been devoted principally to the loss of carbon in coking and the quality of the coke, and the testimony brought out shows the need of more than mere opinions, which may be cited to any length, and from distinguished authorities on each side.

Mr. FULTON gives us, it is true, certain figures of the quantity of coal required to produce a ton of coke at the extensive works under his charge; but he must excuse us if we again ask whether these figures represent *scale weights*, or whether they are merely conventional tons obtained by assuming a car capacity.

The recent demand of the Connellsville strikers that the coal going to the ovens be weighed, and which the coke syndicate rejected, merely emphasizes the impression based on some actual examples that the conventional ton of coal going to the ovens is not a fair measure to compare with the ton of coke leaving them. If Mr. FULTON'S are in each case actual scale weights, his practice is better than any we have heretofore met with in the bee-hive oven.

Mr. FULTON cites an English gentleman as stating that it will not pay to save the by-products of coking in this country, although our import statistics show that we bring some of these from England. This, however, is a question to be shown in the course of the discussion by our correspondents. We trust that specific data will be given in each case, and that mere generalities will be avoided. These questions are of the highest importance, deserving the best attention of engineers; and we trust that Mr. FULTON and others who have full information will contribute of it to their solution.

THE WASHOE ROCKS AGAIN.

Prof. GEORGE F. BECKER has published in *Bulletin* 6 of the California Academy of Sciences, a review of the work of Messrs. HAGUE and IDDINGS on the Washoe rocks, contained in *Bulletin* 17 of the United States Geological Survey. We gave an account of the latter, and of the general history of the subject, in an article published December 12th, 1885, and entitled "The Geology of the Comstock Lode," from which we quote the following paragraphs, in order to bring the present controversy clearly before our readers:

"As we have above shown, Mr. King's conception of the chronological order of the Washoe rocks was metamorphics, granite and syenite, propylite, andesite, sanidin-trachyte, basalt. For this list, Mr. Becker substitutes granite, metamorphics, granular diorite (the syenite of King), porphyritic diorite, metamorphic diorite, quartz-porphyry, earlier diabase, later diabase ('black dike'), earlier hornblende-andesite, augite-andesite, later hornblende-andesite, basalt. As we understand him, he considers the diorite, quartz-porphyry, and diabase to be pre-Tertiary. The east or hanging-wall of the Comstock he pronounces to be diabase throughout the entire 10,000 feet of the main lode, and the west or foot-wall to be granular diorite for more than three quarters of its length, but to be chiefly composed of metamorphic slates at its southern end. While he regards the whole lode with its northern and southern branches as a fissure-system, 'referable to a single mechanical cause,' and charged by 'simultaneous laxiviation,' he adds that 'the lode, considered as a great ore-deposit, is limited to the contact of the diabase with the underlying rocks.' This view is the basis of certain recommendations which he makes concerning future explorations for ore.

"While the foregoing summary does not present with fullness or justice the literature of Comstock geology, it may serve to indicate the importance of the new contribution to which we now turn attention. Messrs. Hague and Iddings come forward with a demonstration that the greatest distinction established by their predecessors, namely, the distinction between the pre-Tertiary and the Tertiary rocks of the district, does not exist: that the igneous rocks of Washoe are all Tertiary; that the 'syenite' or granular diorite of Mount Davidson is the same rock as the 'porphyry' or 'propylite' or 'diabase' of the east wall, and that both are andesite, which appears sometimes pyroxenic and sometimes hornblendic; that these andesitic rocks have been broken through by numerous intrusive bodies of both acidic and basic lavas, represented by hornblende-andesites, dacites, rhyolites, and basalts; that the 'black dike' or later diabase is the same basalt as is found capping the hills on the surface; and that the Comstock lode 'occupies a fissure along a line of faulting in rock of Tertiary age, and can not be considered as a contact-vein between two rock-masses.'"

The main thesis of Messrs. HAGUE and IDDINGS, that "the degree of crystallization developed in igneous rocks is mainly dependent upon the conditions of heat and pressure under which the mass has cooled, and is independent of geological time," is not wholly denied by Mr. BECKER, though he states his doctrine as follows, "Given the chemical composition of an eruptive magma, the mineralogical results are dependent solely on the physical conditions to which it is subjected:" and proceeds to say it will scarcely be denied that the physical conditions attending the cooling of eruptive masses have in some cases been substantially identical at different geological eras. And he points out that the lithological problem is greatly complicated by the relatively deeper erosion of the earlier rocks, so that upper portions of more recent eruptions have to be compared with lower portions of more recent eruptions.

Messrs. HAGUE and IDDINGS, however, presented the Washoe rocks as illustrating and proving the principle referred to; and it is with their observations and reasoning, rather than the general laws they invoke, that Mr. BECKER finds fault. He says, for instance, "While I do not deny that the granular and granitoid rocks are simply those which have cooled at great depths and under great pressure, I can see no evidence at Washoe to prove it. Pressure and depth, not improbably, tend to produce the effects which Messrs. HAGUE and IDDINGS ascribe to them; but I am certain that, in many cases, minute differences of chemical composition produce effects greater than differences of depth of, say, from one to two thousand feet."

Mr. BECKER comes to the discussion with the advantage of having

re-examined the Washoe District during the past season, with the paper of his critics in his hand; and he denies most of their conclusions of fact, and reasserts and supports with additional evidence most of his own. In particular, he maintains (with one minor change, and that a further subdivision of the augite-, or, as he now prefers to call it, the pyroxene-andesite, into two separate eruptions) the order of succession in the Washoe rocks which he formerly announced, as given in our quotation above. He declares that the rocks exposed in the Sutro tunnel constitute at least three distinct eruptions, separated by long time-intervals. He thinks it possible, but improbable, that the "black dike" is basalt, and possible, but improbable, that the quartz-porphyry, older than the andesites, may have been erupted in pre-Tertiary times. Every thing else asserted by Messrs. HAGUE and IDDINGS he denies, and meets their proofs either with contradiction or with additional counter-proofs.

Perhaps the most tangible and interesting to mining engineers of the conclusions of these gentlemen was, that the two walls of the Comstock lode are the same pyroxenic rock, changed somewhat in outward characters by reason of the different depths and pressures at which the two masses (now brought side by side through the agency of a faulting movement) originally cooled and crystallized. Mr. BECKER thinks that, in this, as in other generalizations, they have been misled by reliance upon microscopic slides in a collection. He declares that not only the microscope, but also the examination of the rocks in place, proves a characteristic difference between the two walls, in that the west wall is hornblendic; that this difference is recognizable at all depths; and (what seems to be the most staggering argument of all) that each wall retains its characteristic features to the depth of at least 3000 feet, as exposed in the mine-workings. The diorite of the west wall on the Chollar 3000-foot level is "absolutely identical in mineralogical and physical character" with that wall-rock at the surface. The diabase of the east wall is not less porphyritic at the 3000-foot level than above. In short, 3000 feet of depth, giving a pressure of over 3600 pounds per square inch, has not induced any approximation of the two rocks in structure, and "there is at the lode a very sharp break in the general character of the rock." He argues further that these two rocks can not have proceeded from one eruption; and thus brings us back to the old notion, that the Comstock lode occupies a contact-fissure between rocks of different age.

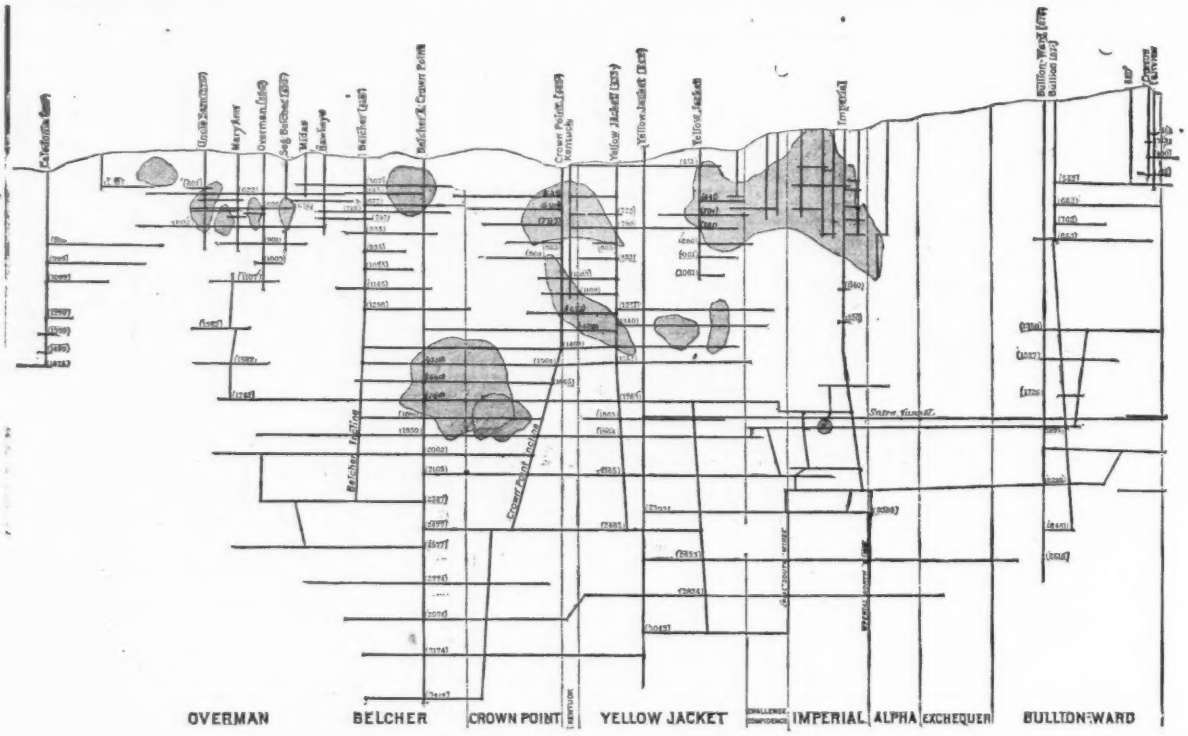
Mr. BECKER has undoubtedly a greater and more recent familiarity with the ground than his opponents. We, who are less competent than either party to pronounce upon the questions raised by them, do not undertake to decide between them. We will frankly confess that in following their successive publications, our minds have inclined in favor of the last speaker. The convictions which we thought we had safely formed under the guidance of *Bulletin* 17, U. S. G. S., are now rudely shaken by *Bulletin* 6, C. A. S. It is a pity; for we would prefer to believe the simpler theory. It is easier to understand and to remember. But we resume the attitude of judicial ignorance with resignation, though with a despairing impression that Washoe is not going to speak to this generation any clear and unmistakable message. One circumstance affords a gleam of hope. Mr. BECKER says he has traced several of the Washoe rocks, at least, into the gold belt of California, where parties under his direction will be at work for many years. "It is not unreasonable to expect," he adds, "that, in the extensive area which will there be examined, some 12,000 square miles, the questions raised at Washoe will be presented in a sufficient variety of forms to insure correct solutions." *Amen!*

GAMBLING AND MINING.

The accompanying illustrations, from the report of Mr. BECKER on the Geology of the Comstock, in Vol. III. of the U. S. Geological Survey, show the positions and extent of the several bonanzas that have made the great lode so famous. It is evident that there is no regularity either in their form, extent, or position in the lode. So that the finding of a bonanza has been for the most part a matter of chance, and its productiveness, after finding, has been impossible to predict.

The old bonanzas that are shown in our engraving produced no less than $320,000,000, of which about 42½ per cent was gold and 57½ per cent silver. And the mines have paid in dividends about $120,000,000.

The "boom" in mining that has so excited San Francisco during the past ten days is based, so far as it has any foundation beyond "a corner" in stocks, on the striking of some pay-ore on the 1436-foot level of the Consolidated Virginia mine. Very little information is allowed to get out



THE BONANZAS OF THE COMSTOCK.

concerning this reported "bonanza," but it is generally believed to be a body of ore known years ago to exist there, and which has been kept in reserve until such a condition of the market should exist as would permit of a "boom," which would allow the insiders to again shear the "lambs" and get out before the inevitable assessments were called afresh.

Another theory—for, as already stated, there are few facts on which to base opinions—is, that the familiar trick of selling stocks short by the insiders just before calling assessments and buying back after, had grown into a system, and presented an opportunity for such knowing ones as Messrs. MACKAY and FLOOD, to corner the too confident bears. Hence the advance in prices of the whole line of Comstocks, though the ore-body in the Consolidated Virginia is used as a lever to push them up.

We receive reports that considerable amounts of bullion have been shipped to San Francisco, and that a dividend will soon be declared; all of which may be true; but the incredulity with which these announcements are received shows how little confidence is placed in the honesty of any statement coming from this source.

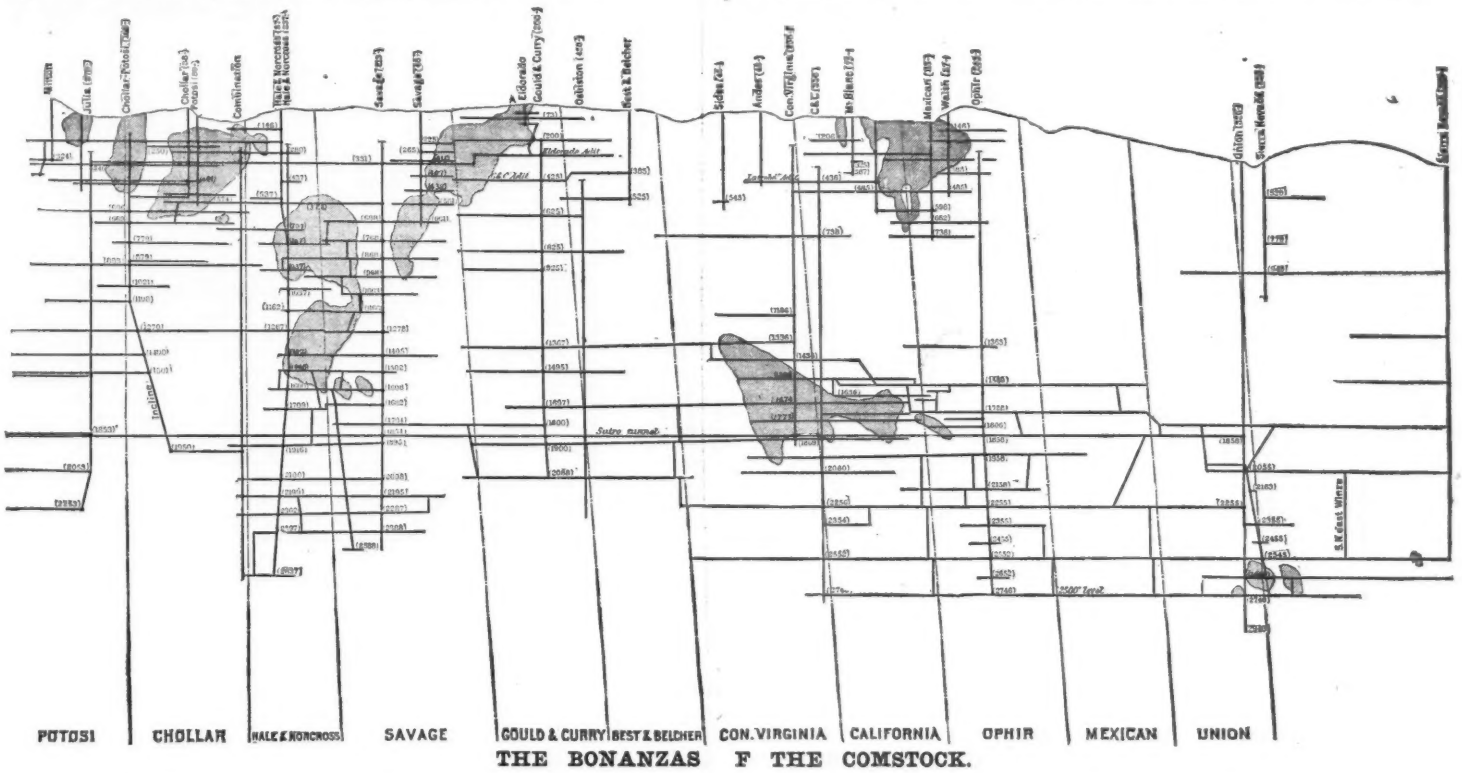
There is certainly one fact in favor of profits from working even a low-grade ore-body on the Comstock that has not existed for some years. The heavy expense of pumping from the deep levels has now ceased, and with the much lighter expenses, including the lower cost of milling, a profit may now be made in extracting the low-grade ores above the Sutro Tunnel level. This may enable some of the mines to show a profit where they have of late called assessments. It should not be forgotten, however, that this is but "the beginning of the end;" for the ground above the tunnel has been so thoroughly explored by drifts and the

diamond drill that there is no possibility of any large ore-body existing there unknown; nor is the Consolidated Virginia ground any exception, as far as may be judged by an inspection of the official maps from which we take our illustrations.

Whatever may be found by the active exploration of the lode that this revived hope will bring about will pay tribute to the Sutro Tunnel, whose stock might be benefited if the amount of bonds and accrued interest ahead of it were not so enormous.

Though we must consider the glory of the Comstock as having departed, and the present "boom" in its stocks as altogether unwarranted by any known or probable facts; yet, if we glance back over the past history of the great lode, we can easily understand how the fever breaks out again on even so slight a provocation as at present exists.

The Consolidated Virginia stock in February, 1871, fell to $1⅛ a share on 11,800 shares, a figure that represented $18,850 for the entire mine, though ten times that amount had been expended in it during the two preceding years in the vain effort to find a bonanza. It was then that Messrs. MACKAY, FAIR, FLOOD, and O'BRIEN purchased. From this figure, the stock went up until, in April, 1872, it reached $160 a share on 108,000 shares, and declined within two months to $15. The next year, it fluctuated from $35 to $110, when the bonanza was first struck. At the end of 1874, the stock had reached $610 a share, and in January, 1875, it reached $780 a share, or $84,240,000 for the mine.



THE BONANZAS F THE COMSTOCK.

The following table shows the rise and fall of the "Big Bonanza:"

YEAR.	CON. VIRGINIA.		CON. CALIFORNIA.	
	Product.	Dividends.	Product.	Dividends.
1873	$645,582.17			
1874	4,981,484.05	$2,592,000		
1875	16,717,394.76	11,448,000		
1876	16,637,649.47	12,960,000	$13,400,841 40	$8,640,000
1877	13,734,019.07	8,640,000	18,919,894 98	14,040,000
1878	7,996,753.11	5,400,000	10,949,078.93	7,020,000
1879	2,481,358.83	1,350,000	2,576,972.70	1,620,000
1880	1,756,536.49	540,000	890,043.43	
1881	144,143.43		122,107.26	
Totals	$65,114,921.38	$42,930,000	$46,858,938.70	$31,320,000

Total product of the "Big Bonanza:" gold, $52,557,388; silver, $59,416,472; grand total, $111,973,860.

Since 1881, the product of the mines has been from low-grade ores scattered through the workings.

The bare possibility of finding another such bonanza can explain, if it does not justify, a good deal of wild gambling; but now that there is apparently no possibility of finding any considerable ore-body above the Sutro tunnel level, it is impossible to see any reason for the last access of the old-time folly.

Nothing is so injurious to legitimate mining as the gambling in worthless stocks, simply on the expectation that some one else will be found more excitable and less prudent than one's self; and in the interests of a great and honorable industry, we protest against the ensuing gambling losses being charged as investments in mining.

Never before in the history of this country were so many profitable mines worked, or, until this craze set in, were fewer worthless mines dealt in. Now, when the break comes and the foolish gamblers count their losses, let them charge these to gambling and folly, just as if they had played a game of chance with some "heathen Chinee" with the cards up his sleeve, or with loaded dice against them, and not injure a legitimate, honorable, and extremely profitable industry by claiming that they lost their money in *mining*.

The dividends already declared by our gold, silver, and copper mining companies this year exceed by $1,000,000 the total dividends earned in 1885, and by the close of the present month will aggregate ten and a half million dollars, or two millions more than in 1885.

CORRESPONDENCE.

[We invite correspondence upon matters of interest to the industries of mining and metallurgy. Communications should invariably be accompanied with the name and address of the writer. Initials only will be published when so requested.
All letters should be addressed to the MANAGING EDITOR.
We do not hold ourselves responsible for the opinions expressed by correspondents.]

Has Brass, and Begs Information.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: I think it would be worth while to reserve a part of a column for the publication of the names of offenders like those alluded to by Ledoux & Co. in your issue of November 27th. Here is my contribution. Returning recently from a professional visit to the South, I received a letter from a lady whom I had met once while there, inquiring if I *would* be so kind as to write back to her what kind of ore was a certain specimen that she desired to send me. I acquiesced, and to-day the express company collects 50 cents from me, and leaves a box that on opening proves to contain six bags, each containing from 4 to 50 heterogeneous specimens. A neatly written card on top reads: "Compliments of Mrs. ——— ——— and son. Doctor, please send us word regarding contents of box at earliest date possible."

I call this pretty probucculous. Yours, INDIGNANT.

Dec. 7.

The Hassayampa, Arizona.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: You may be interested to know something of the work doing out here on the Hassayampa, which at some seasons is a raging flood, and again is a dry river. With my two sons, I am building a 100-foot high dam of granite, to store the water to use for stock and irrigation and mining below here. As incidental to this, we have to build a short railroad, open quarries, build temporary dams, construct roads, flumes, trestles, etc. We have run a tunnel at the side, through solid rock abutments. Our hoists are from Kendall & Roberts, of Boston, who advertise in your JOURNAL.

My eldest son, Francis H. Blake, resigned his position as superintendent of the Silver King mill to come here as assistant engineer, and we are driving this work as fast as we can with 150 men and teams.

The JOURNAL is a most welcome visitor in this comparative wilderness. I never before so fully appreciated its value to every engineer. You deserve especial commendation for your efforts to save investors from the exaggerated statements and promises of some mine venders, especially abroad. Success to all your noble efforts!

WALNUT GROVE, ARIZ., Nov. 30. Yours very truly, W. P. BLAKE.

Blast-Furnace Slag and Slag Cement, Compared with Portland Cement.

EDITOR ENGINEERING AND MINING JOURNAL:

SIR: Your editorial remarks on the subject-matter that appeared under the above title in last week's JOURNAL open a wide scope for technical discussion. Speaking of German cement, the *ton* (tonne) means a *barrel* of 180 kilograms gross and 170 kilograms net weight

The slag that is used for slag cement does not yield a cent's worth of direct income to the iron-master, and never will do so, unless the cement that is made from it can command the same or nearly the same price as that which is made from clay. Clay-beds that are suitable, and favorably located for the manufacture of Portland cement, become valuable property when they are successfully worked for that purpose; and blast-furnace slag can only become valuable, if it is of such composition when put in such condition that it can be utilized with equal or greater advantage for producing as valuable a product as that which is made from clay

The average composition of Portland cement corresponds to the formula: $3CaOAl(Fe)_2O_36CaO3SiO_2$. It contains nearly twice as much silica as it contains alumina and ferric oxide, and twice as much lime as all the other ingredients put together. The clays from which these cements are made consist, in the main, of silica and alumina, in the above proportions, and the desired cement composition is easily obtained by adding from 200 to 250 parts of lime (CaO) to 100 parts of clay.

In order to make as good or better Portland cement from blast-furnace slag, it is not only necessary that the slag should have the silica and sesquioxides in the above proportion, but also, that the proportion of lime that is already in combination with those two essential factors should be in a certain ratio to the latter.

By referring to the "Notes on the Formation of Siliceous Slags," in the ENGINEERING AND MINING JOURNAL of July 31st and October 16th, 1886, it will be seen that slag of a composition similar to that of type IV.: SiO_2 37½ per cent, Al(Fe) O_3 17·17 per cent, CaO 42 per cent, fulfills these conditions.

Its formula is: $18CaO4R_2O_315SiO_2$, and adding thereto $24CaO = 42 CaO4R_2O_315SiO_2$, the composition comes quite near to the cement formula above quoted. One ton of this slag, properly treated, and one ton of limestone ($CaCO_3$), would yield one ton and a half of Portland cement, whereas one ton of clay and *four* tons of limestone will yield, on the average, three tons and a quarter, or only one and three tenth tons of cement for two tons of raw material.

Slag of such suitable composition is made at many furnaces in the United States, but it is rather scarce in Europe, at least in England and Germany. According to the statement made by Dr. Delbrück, at the annual meeting of German engineers, held in Stettin, last year, the production of German Portland cement, for the year, was estimated to reach a total of five million barrels, which is equivalent to 900,000 tons of 2000 pounds avoirdupois. It is not to be wondered at, that the manufacture of slag cement, in the midst of such a formidable competition, should be confined to the production of an inferior article, especially when the principal raw material, the slag, is not of the most desirable quality.

The six hundred thousand tons of slag, which could be used to manufacture yearly nine hundred thousand tons of good Portland cement in this country, are now allowed to run to waste, though their utilization for the above purpose would insure a measurable economy in the cost of pig-iron. Respectfully, A. D. ELBERS.

HOBOKEN, Dec. 9.

OFFICIAL STATEMENTS AND REPORTS.

Hope Mining Company, Montana.

At the general meeting of the stockholders of the Hope Mining Company, in St. Louis, on November 8th, the President, Mr. Charles Taussig, presented his annual report, from which we make the following abstracts.

MINE.

The mine has produced 5853 tons of ore at a cost of $52,819.75 or $9.03 a ton. Only a very small portion of ore was extracted up to March 1st, our whole force being mainly employed in opening and preparing the mine for the operation of the new shaft and hoist. The production of the first five months of the fiscal year was only about 800 tons, while the remaining seven months produced nearly 5100 tons. The shaft involved an expenditure of $5823.42, and the hoist $4509.90: this covers the complete cost of those improvements. We have driven during the year 2862¼ feet of levels and drifts at an average cost of $19.47 per foot.

MILL.

The mill closed down November 3d, 1885, and, with the exception of eleven days in January, remained closed until March 1st, 1886, after which time it had a steady run except the usual closing down every sixty days for a general clean-up. The new boiler is fully up to my expectations, making a saving of from 8 to 10 cords of wood a week, and doing satisfactory work.

The mill ran 244 days, crushing 6572¼ tons of ore, producing 99 bars of bullion, the government assay of which was 113,647·94 ounces of fine silver, equal to 17·30 ounces per ton, producing in bank $112,261.38. The expenses of the mill proper were $26,216.74, equaling $4 per ton on the quantity of ore reduced.

The statement of indebtedness of the Philipsburg department, September 30th, was $8514.61, against which the superintendent's draft of $9000 was paid on October 20th.

The present indebtedness of the company consists of—

Loan at State Savings Association	$10,000
Loan from Charles Taussig	3,250
	$13,250

Against which the company has

Balance in bank, November 1st	$4,000	
Shipment October 16th, estimated proceed of 6 bars	5,500	
Shipment November 2d, estimated proceed of 7 bars	7,500	$17,000

The necessary expenditures for new machinery and other needed improvements may necessitate the carrying of part of the indebtedness for a short period, but it will be liquidated as quickly as the finances of the company will permit. All the supplies shipped have been paid for except about $500, which have been paid since the closing of the books on the 1st inst.

The difference in the rate of silver between the past year and the present made a reduction of over $10,000 in our receipts, the average price obtained being about 9 cents an ounce less than last year. I am in hopes that the present steady advance may continue.

The treasurer's report and accompanying tables and exhibits, herewith attached, will give you full particulars and enable you to form a clear insight into the affairs of the company. The numerous recommendations of needed improvements made by the superintendent will have the earliest attention of the new Board.

The treasurer's report for the year is as follows:

CASH ACCOUNT—(HOME DEPARTMENT).

To November 1st, 1886, as follows:

Balance of cash in bank in St. Louis, November 1st, 1885	$570.58
Receipts.	
Proceeds 99 bars bullion, No. 1028 to No. 1126 inclusive	$112,261.38
Bills payable	10,000.00
Charles Taussig	3,250.00
Discount on supply bills	35.65
	$126,117.61
Disbursements.	
Superintendent's drafts	$104,800.00
Hauser and at old claim from former administration	2,622.48
Express charges on 101 bars, No. 1032 to No. 1132, inclusive	1,591.88
Supplies and machinery purchased in St. Louis	7,469.86
Insurance	742.50
Home department, salaries, rents, taxes, legal adviser, and miscellaneous	4,849.08
Balance of cash in bank in St. Louis, November 1st, 1886	$4,041.78
Estimated value of 6 bars bullion, No. 1127 to No. 1132 inclusive, in New York	5,500.00
Estimated value of 7 bars bullion, No. 1133 to No. 1139 inclusive, shipped from Philipsburg to New York	7,500.00

ST. LOUIS, Nov. 8, 1886. LOUIS DUESTROW, Treasurer.

THE GOLD QUARTZ MINES OF GRASS VALLEY, NEVADA COUNTY, CALIFORNIA.

Written for the Engineering and Mining Journal by Frederick G. Corning, M.E.

The name of Grass Valley has become classic in the history of American gold mining. For some thirty years, remunerative operations have been quietly but continuously carried on in that famous region, until finally, the economic merits of its phenomenal belt of auriferous, pyritous quartz lodes, and the conservatism of management and business success that have attended mining in that part of California, have won for Grass Valley a reputation as a permanent, legitimate gold mining center, second to none of the mineral districts, either in the United States or in foreign countries.

Besides being situated in the midst of the largest, the most important and prosperous gold quartz mining district in California, in the heart of the great auriferous zone extending along the western flank of the Sierra Nevada Mountains, the town of Grass Valley numbers about 7000 inhabitants, and a healthy activity pervades all business, with every indication that the place has come to stay, and has yet to reach the zenith of its growth. It is most picturesquely nestled in the fertile, fruit-grown foothills of the beautifully wooded range, distant from San Francisco about 160 miles by rail, of which 144 miles are on the Central Pacific, from San Francisco to Colfax, and 16 miles on the Nevada County Narrow-Gauge, from Colfax to Grass Valley.

It would be hard to find a "camp" (if indeed this term be at all applicable to that pious old rural town) that, in proportion to its size and importance, has been freer from the speculative craze and disasters that are sometimes connected with the working of claims adjacent to ore-deposits of exceptional value in our Western States and territories. Nor would it be easy to find in the annals of American quartz mining a group of mines whose working has been rewarded with more gratifying, more regular, and longer continued returns, and whose profitable operation is more assured for many years to come, than the Idaho, North Star, and Empire mines, which are at present the leading producers and dividend-payers of the Grass Valley belt.

The discoveries of gold quartz in place in this section of Nevada County in the year 1850, following the extensive opening of important placer mines that had begun at an earlier date, are among the first in California. This county contains in a marked degree every form of gold deposit known in California; and as an annual bullion producer of about $4,000,000 in gold and some $60,000 in silver, the latter contained in the sulphuret concentrates from the milling process, it outranks every other county in the State, with Amador, Placer, and Sierra following next in order.

The known lode-bearing area of the Grass Valley District is comparatively small for the number of veins it contains. Its outside limits are not over seven miles in length by four in width, which region is joined by the Nevada City Mining District to the north. But the most noted tract of great developed veins belonging to the Grass Valley District proper is embraced within a radius of about two miles, in which the number of lodes, and the qualitative and quantitative uniformity of the ore they carry, are peculiarly favorable to great productiveness and permanent prosperity.

For numerous reasons of business policy, the publication of mineral records and statistics of production have in many instances been only fragmentary; for it is notable that the miners, much to their credit, avoid the customary advertisement and devote their energies rather to the mineral resources of the region, trusting to their actual merits to earn for the mines the deserved celebrity. This loyalty to and belief in the Grass Valley lode system are amply attested by the numerous subscriptions of miners and local residents to the stocks of companies formed to reopen temporarily suspended and mismanaged properties; for Grass Valley, like all mining districts, has had its ups and downs, its tribulations and set-backs, which, however, it should be noted, were owing more to irregular and unsystematic mining and milling and to an imperfect knowledge of local vein phenomena than to any other cause. But leaving the details of these subjects for later consideration, the following list of prominent mines, with their gold outputs, recently compiled from reliable

sources, is deserving of mention as illustrating the rich productive character and possibilities of Grass Valley lodes :

Mine.		Depth on plane of lode. Feet.	Gold production.
Idaho	Present leaders.	2500	$9,000,000
North Star		1600	3,000,000
Empire		1700	5,500,000
Eureka		1200	5,700,000
Allison Ranch		700	4,500,000
Gold Hill		400	3,000,000
Rocky Bar		1000	2,500,000
Massachusetts Hill		700	2,000,000
Pittsburg			1,500,000
New York Hill		1200	1,300,000
Other smaller mines			3,000,000
			$41,000,000

A much larger estimate has been reached by including other mines not specified in the foregoing table, besides allowing for the large amounts of precious metal that have been wasted and stolen ; but these figures will answer in support of other testimony embodied in this article as to the prosperity and lode wealth of this already celebrated district, and the inducements it offers for the further investment of capital under conservative guidance.

The lodes traverse various formations, occurring on the plane of contact between two dissimilar rocks, and also cutting independently against the planes of bedding. They run as parallel or companion veins, and also in cross systems. The Idaho-Eureka lode occurs on the contact between a metamorphic shale-slate (of coarse, schistose structure) and serpentine, while the Empire and the North Star cut through the slate ; the Allison Ranch, through a granite formation ; and the New York Hill courses in diorite (said to be !). The veins, as a whole, are exceedingly regular, only small, insignificant faults having been observed as yet in the principal mines. They are subject to violent waves on the strike and dip, which cause the drifts to twist and bend considerably. These waves, in certain mines, have a tendency to swing the ore-bodies into the hanging country, but they almost invariably come back into their normal courses, and are encountered in the drifts and inclines, which are regularly continued.

The ore occurrence is of the chute, channel, or chimney form, and throughout the mass of average grade ore (from $12 to $25) are sprinkled pockets and rich streaks of specimens, which are collected and disposed of as a separate division of mining. The feather edge or contour limits of the chutes form irregular, wavy lines, so that the point at which a new level running from the shaft toward a chute will come into ore does not always correspond with the calculation based on the average trend of the chute and the angle that such line of trend makes with the main incline-shaft. Frequently a chute will appear to be leaving the line of dip so fast, owing to the drift running into a concavity in its boundary, that as much as 200 feet will have to be drifted through practically barren ground, past the normal line of intersection, before the pay-ore is encountered.

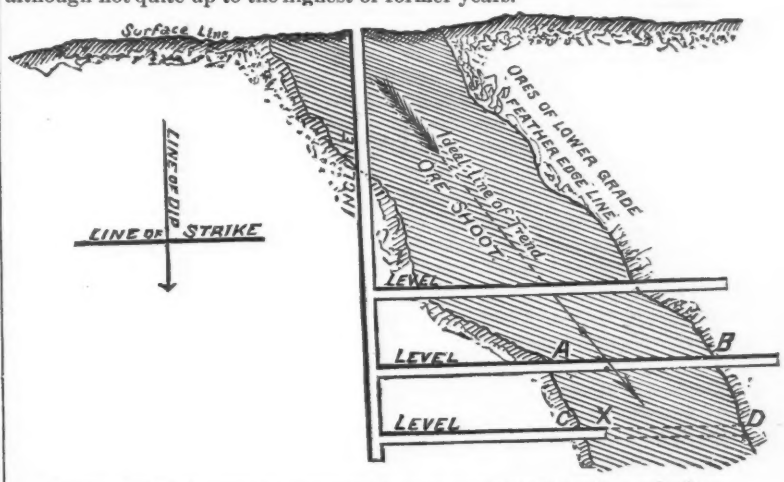
But no anxiety is felt on this account ; for sooner or later, the chute is surely met with, and the drift continues in ore across the same for the usual width. Indeed, so persistent are these ore-channels that, once the direction and width are clearly determined, by a series of levels at regular intervals, a new level run at a lower point in the mine when coming into the chimney at *X*, for example, puts practically the whole stripe *A*, *B*, *C*, *D* in sight, so infallible is the continuity of the ore ground in such mines as the Idaho, the North Star, and the Empire.

The gold is inclined to occur finely disseminated through the milk-white lode quartz, and is closely associated with pyrites and occasional spots of galena. The presence of the latter indicates rich ore, as does also the arrangement of the ore constituents in banded, ribbon structure. The proportion of pyrites is such as to yield three and a half tons of sulphuret concentrates in one hundred tons of milled ore. Where the pyrites occurs, however, impregnated in the fresh or stained country-rock adjoining the lode-filling proper, it becomes impoverished in gold contents. The presence of calcite is likewise unfavorable to the quality of ore. In places, the metallic constituents disappear almost entirely, leaving the quartz in compact, pure white masses. Such apparently barren bodies will frequently mill from $8 to $12 per ton. Owing to the improvement that quartz mining has undergone within the past two years, much better results are now attained at Grass Valley in milling these grades of ore than was formerly possible. This closer working of the ores has been brought about by a reduction of mining and metallurgical costs, in consequence of—1st, the extensive application of water-power for hoists, for milling, and lastly, but not less important, for air-drills ; 2d, the building of mill plants with a greater regard for gravity handling and automatic action throughout, combined with a multiplicity of stamps. The gains resulting from these changes have begun to tell, and the bullion-producing industries in this section of California will now be steadier and longer sustained, backed by the large amounts of ore, formerly considered low grade, that are now susceptible of profitable exploitation. The appreciation of the advantages offered under the new standard of mining and milling is showing itself in the work of rehabilitating old and partially deserted mines in numerous parts of the State ; and in certain districts where the size of the lode is favorable to a large scale of operations, gold-bearing quartz is profitably worked with a yield as low as $5 a ton.

The career of the Idaho has, since its first opening, been followed with interest by the mining community ; and its long-continued dividend record has come to be a matter of standard reference in government and other reports. Some of the salient features of this great gold property are always worthy of notice, even at the risk of monotonous repetition. Its gross yield approximates $9,000,000, of which about $4,000,000 have been paid in profit, in regular monthly dividends extending over a period of eighteen years. This is equivalent to nearly $1300 a share on the 3100 shares of capital stock of a par value of $100. The claim embraces 3100 feet of the apex of the lode, which has a northeasterly and southwesterly course, a southerly dip of 70 degrees and a width of from three to six feet, being the first extension east of the old Eureka mine. The latter was an exceedingly rich, profitable property for many years, until the ore-chute finally pitched into the Idaho ground. This remarkably productive ore-chimney, which varies in width and value, trends downward to the east, ranging from 500 to as high as 1200 feet across, and is the only paying one known in the Idaho lode. Its western edge, in the lower levels, feathers into a barren spar zone that runs for several hundred feet and appears to be unfavorable to the deposition of gold ore. The hanging-wall of the Idaho vein is marvelously even and sharply defined. It shows frequent striations, and is so smooth and straight that it presents the appearance of having been worked to order by some skilled stone-cutter. The foot-wall, though also quite regular, is given to swelling, which necessitates much heavy timbering, and increases the cost of mining as compared with the conditions prevailing in other neighboring mines. But this swelling peculiarity of the foot country is only found in the ground incasing the ore-chimney ; outside of that zone, strange to say, the foot-wall does not show this tendency. Below the seventh level, all the levels are run to the east, to catch the main chimney that, in the lowest workings, is making rapidly toward the Maryland claim, in which property, it is generally believed, the chute will eventually be found to continue, but at a depth that may render its rapid, economical working greatly dependent on the right of way through the Idaho, or other arrangements with that company. As the Idaho, like most other Grass Valley mines, has not been worked or trimmed to sell, it has happened once or twice in its career that, in consequence of the development-work having fallen behind, temporary exhaustions have set in, which, in conjunction with the encountering of lower grade bodies, and unusually heavy expenditures in the improvement account, have caused decreased earnings for a few months at a time. Thus in 1883, the profits ran down to $34,100, as will be seen in the following table :

Year.	Tons.	Yield of rock.	Cost of mining and milling.	Product.	Dividends.
1881	27,945	$22.95	$9.51	$640,000	$271,250
1882	27,639	20.64	9.83	627,000	263,300
1883	28,572	12.76	8.70	362,000	34,100
1884	31,143	18.04	7.86	561,895	271,250

But from that year, the mine improved rapidly and returned in 1884 to its old-time prosperity. Since then, it has continued to improve, until now, at a depth of about 2400 feet on the incline plane of the lode (about 1800 feet vertical measurement), the mine is producing a most satisfactory quantity and grade of quartz, considerably above the average, although not quite up to the highest of former years.



A great saving in running expenses has been effected by the substitution of water-power for steam. The Pelton wheel, of the "hurdy-gurdy" class, designed for relatively small supplies of water under high heads, is in general use, and gives most satisfactory results. This change cost the Idaho Company about $55,000 ; but the actual saving in fuel, labor, and repairs amounts to at least $30,000 a year, so that the interest accruing on the amount invested in this plant is all that could be desired.

At the present time, there are some 220 men on the company's pay-roll, of which ninety are stopers (equal 45 men on ore in each shift) ; and the daily output, being about 95 tons, gives a little over one ton of ore per stoper per day, and something over two men on the pay-roll to the ton of ore mined and milled. Sinking at present depth costs from $25 to $32 a foot, and drifting $9 a foot : wages, from $2.50 to $3 a day.

The 35-stamp mill of the Idaho Company, with the exception of the addition of self-feeders, has hardly been changed or improved since the early days, and belongs to the antiquated type. The stamps weigh 850 pounds ; number of drops, 72 ; hight, 9½ inches ; capacity in twenty-four hours, 95 tons ; proportion of sulphurets, one per cent.

While the Idaho is perhaps the most renowned mine in Grass Valley, there are other properties that in earning capacity are following closely in its wake, although, for various reasons, less has been openly said concerning their affairs. The Empire and North Star mines belong in this category. These are in some respects twin mines, having many features in common in point of vein geology and methods of working, besides being under the same administration ; and as the Empire is the oldest working mine in California, it is, perhaps, entitled to first consideration. The claim embraces two companion veins only 100 feet apart, both carrying rich ore, so that the property is practically a double mine ; and having only an average dip of about 30 degrees west and a north-northeast and south-southwest strike, it represents the flat veins of the Grass Valley region in opposition to the Idaho, which is a type of the practically perpendicular or straight veins.

For about thirty years, the Empire has been worked nearly continuously, although for many years after its first discovery it was operated in a most desultory manner. But, notwithstanding the former crudeness and waste, the mine has always paid, as the ore is of high grade and exceedingly abundant. Several years ago, the mill was entirely reconstructed and has since been enlarged, until now forty stamps, with self-feeders, are constantly in operation, and the mine is working to better advantage and yielding more regular and larger monthly dividends than

ever before. The Triumph concentrators, used entirely by this company, give great satisfaction; and although the mill plant is not as perfect in detail as the new mill of the North Star, which is now nearing completion, nearly all of the latest and best improvements for convenient and economical working have been introduced by the manager, so that the cost of milling is only 64½ cents a ton. The sulphurets are much higher in grade than those from other Grass Valley mines, running from $100 to $250 a ton. They are sold to custom works at a reduction of $18 a ton for working charges. It is claimed that the mill saves 95 per cent!

At the North Star, an east and west lode, with a dip to the north of from 12 degrees to 21 degrees, ore averaging $20 (higher in places) is extracted from the east 5th, 11th, and 12th levels, and from the east and west 13th, 14th, and 15th levels, with large strips of stoping ground opened up ahead and the mine improving daily. The property will continue for a few weeks, pending the completion of its new 40-stamp mill, to supply the 10-stamp custom mill where its ores have been treated for the past year or two. The mine is so extensively opened that three times as many stopers as are at present employed can be put on ore without straining the property. Every thing that expert designing and solidity of construction can do has been lavished on the North Star mill. It is building by the Risdon Iron-Works, of San Francisco, and will be second to none in California. It will be operated by three turbine-wheels, which alone will save $1000 a month in fuel. In large and in detail, the North Star plant will be the model mill of the State. It will reduce manual labor even more completely than the Empire, and the cost of milling will not exceed fifty cents a ton. In addition hereto, these two mines are soon to have their own chlorination-works, which will prove to be a further source of economy to both the Empire and North Star companies.

It is to be regretted that working maps are not generally kept up in the Grass Valley mines; for among other things, it would be interesting to compute the stope area corresponding to the production of a certain tonnage extending over a period of years; and from this to estimate the productive capacity of a given lode per square fathom. Such a unit would often serve, in one and the same mine, as a basis from which to gauge the sight tonnage of the irregularly blocked-out reserves, which, under the present circumstances, is a difficult problem. Also the compilation, by the United States Geological Survey, for instance, of a general underground mining chart of the entire district, accompanied with a series of sections and a survey of the surface topography, would disclose many important relations existing between the lodes of the Grass Valley belt, in addition to solving many problems of extension-claims, lode parallelism, apex continuity, etc., in relation to surface claims.

As above intimated, the Grass Valley industry, as a whole, since the early days, has been somewhat erratic in character. At first, one property would loom into prominence, and, through the continuation of its profitable operation for a long period, an impetus would be imparted to the development of other ledges, which, in turn, would become paying properties. Then, after combined activity for a number of years, some irregularities would set in and cause one or more mines to suspend. Almost all of these stand-stills, however, may be traced to a change of ownership or administration, or to the encountering of water or some misunderstood and much exaggerated freak of vein geology; but these crippled enterprises were almost immediately succeeded by a new group coming into the field of active producers, until to-day the Idaho, the North Star, and the Empire happened to be the dividend leaders. And while the Idaho and the Empire have been almost continuously worked with large profits to the owners, the former for over eighteen years and the latter for nearly thirty years, each having paid several millions in dividends, the North Star mine remained, until within two years, inactive for quite a long period, notwithstanding its working has always been rewarded with gratifying returns. Lately, this mine has been developed into a permanent paying property of greatly increased value, with ore-reserves surpassing in extent those of any other property in the district, thanks to the sagacity and able management of Mr. John Hays Hammond, the well-known expert of the Pacific coast. The other mines are either operated on a small scale or are lying idle. But the strong fact remains, significant of their prospective value, as well as bearing favorably on the economical nature of Grass Valley quartz lodes in general, that those mines that are properly worked are earning handsomely, while those that are now shut down and filled with water are known to have paid. Hence, many of these dormant enterprises were not disastrous failures, nor did their working incur losses to the owners; but, on the contrary, a number of them yielded profits, notwithstanding the crudeness, the waste, and the great expense attached to early mining and milling methods. Oftentimes, indeed, merely a lack of the necessary capital to put in suitable pumping and hoisting machinery was the only reason for shutting down—intended at the time to be only temporary. In other cases, the exploratory and development-work was hardly carried a foot in advance of stoping, nor a dollar contributed from the profit account toward a fund to maintain a healthy proportion between the exploitation of ore and the opening up of new ground, to thus insure the mine's prosperity from year to year. Indeed, this hand-to-mouth system has only recently been radically changed by the advent into the district of Mr. Hammond, whose energy and influence have played an important part in the resuscitation of Grass Valley mines, and whose efficient management of the famous Empire and North Star have brought about a greatly needed reform, for which he has received much credit in San Francisco mining circles.

The most conspicuously favorable features of the Grass Valley belt are found in the facts that, first, the bottoms of all the active properties are in good ore, some quite above the average grade, which has given rise to claims of increasing richness in depth; secondly, that the occasional accidents and interruptions in the past working of the mines were not brought about, in most instances, by a giving out of the ore either in depth or in the direction of the strike (measured across the chimneys), for many of the at present inactive claims named in the foregoing list are known to have faces of pay-ore exposed in the extremity workings, on the strike and dip, and also standing in some of the stope contours. Some of these apparently forsaken ex-dividend properties combine, therefore, the elements that go to make good mines and insure for them an important part in the future, when a more general and vigorous development shall be resumed—a new era in Grass Valley that may be confidently predicted as not far distant. Then, too, should here be considered, as having an important bearing on the future possibilities and probabilities of these properties, that many of their good records were made at a time when labor was $4 and $5 a day, instead of $3, as now, the thorough saving of the sulphurets on an economical scale undreamed of, and the standard of systematic mining, as well as the principles and practice of milling, much lower than nowadays, when ores of considerably lower grades are profitably worked.

The basis of the long-continued remunerative mining at Grass Valley, which has stood up against many extravagances of management, lies in the remarkable continuity and persistency of the ore proper in the ore-bearing ground and in the liberal proportion of such ore ground to the total vein area. This ideal lode development in respect to the quantity of pay-ore, which is favorably distributed in chutes or chimneys of unusual width, as compared with the ordinary proportion of the width of a chimney to its extent on the trend, fairly assumes, in such properties as the Empire and the North Star, the appearance of continuous ore zones or sheets of ore running through the entire claim, and broken alone by occasional spots of lean ground; that is, the chutes appear to be about as extensive in a horizontal as in a downward direction. And this exceptionally liberal ore-deposition stands out so prominently in comparison with the average lode structure of quartz mines that it suggests some reflections in regard to mining experiences in general. A survey of the field shows that there is no scarcity of ore-deposits from which specimens and small lots of mineral can be obtained, which, in respect to grade and quality, are "pay-rock;" that is, the factor of *quantity* is found less frequently than *quality* of ore, in a degree sufficiently favorably to constitute a basis for a pay mine. And hence in the greater number of the failures of mining ventures, an insufficient quantity, rather than an inadequate grade of ore, is at fault, although it is not denied that a fading away of the precious metal contents and a transition into ore-bodies of too low a grade to work profitably are also frequently met with. The overlooking, in the examinations of developed mines, of the relations between these *natural essentials*, is at the bottom of many mistakes in mining judgment, and has caused not a few of the lamentable disappointments in the industry. Indeed, it seems almost impossible for some people to distinguish between *vein* and *ore*, which words, to the uninitiated, are practically synonymous. They do not stop or care to think that veins, even "*true fissures*" (!), exist without any ore in them, or that a vein may be true and satisfactory in all geological and mineralogical particulars with the sole exception as to the amount and dimensions of the ore-bodies it contains, the latter being often so aggravatingly distributed and limited as to always keep the mine in a most promising appearance for dividends, but which, alas! are doomed never to be earned, and assessment upon assessment is substituted.

The Grass Valley mines are not sustained by huge chamber bonanza ore-bodies, in point of thickness between walls, neither do they depend for their life on a thin, high grade, sensational pay-streak; for there is an abundance of lodes with as rich ore; but the district is supported by a lode system containing extensive, never-failing, and generous ore-channels, of which class of ore-deposits these mines are typical representatives.

Taking collectively the records of all forms of gold deposits in Nevada County, it is highly probable that no mining district of equal area exists that has produced as much gold. And while it is true that the annual production has recently become diminished, owing to the depression in placer mining following the sweeping legal decisions on the *débris* question, yet the flourishing condition of the quartz mining industry justifies the assertion that no known region has the promise of greater mining permanency.

Mills Building, New York.

THE BIETRIX BRIQUETTE MACHINERY.

The growth of the briquette industry of late years, both in England and on the continent of Europe, is very considerable. The consumption is largest on the continental railroads, where briquettes are greatly in favor as a fuel for locomotives. The foreign war and merchant steamships also burn briquettes extensively in preference to lump coal. They are now used with coke profitably in the blast-furnace and cupola, while, for household purposes and for steam, the demand grows rapidly. Gas companies are also beginning to buy them.

This growing demand is mainly due to the excellence and success of the machinery known as the system Bietrix. Since 1879, about 80 of these plants have been put in operation, with an average annual capacity of from 30,000 tons to 90,000 tons each, and a total annual capacity of nearly 3,500,000 tons.

The process of manufacture briefly is this: The coal slack is automatically elevated into a drying-furnace, and heated until the water is evaporated from it. It then passes out upon a mixing-screw at the left, as shown in our cut; and just there, the coal-tar pitch, which has been automatically elevated and carried along a traveling belt, is dropped upon the slack. Our engraving shows a section of the drying-furnace and mixing screw, so exposed that the working may be seen. The screw mixes the two, and propels them along until they drop into a steam-chest nearly over the press. Here, the pitch is heated properly, and the mixture passes down into the molds, where the pressure is applied and from which the completed briquette drops upon a traveling belt, and is conveyed into a bin, car, or wagon, as desired, ready for use.

(Two substitutes for pitch, which are much cheaper, are already urged in Europe, namely, waste from corn-starch factories, and crude molasses. Only about 1½ per cent of the latter is required.)

The machinery is powerful, is made with exact care, and gives a pressure of from 3000 to 4000 pounds to the square inch.

About six hands, in part boys, on each turn of ten hours, will operate a plant making 30,000 tons yearly, and about twelve on each turn will answer for one of 90,000 tons, the entire process being nearly automatic.

The Bietrix plants are widely scattered, having been sent to Belgium, Austria, Germany, Hungary, Russia, Spain, South America, and throughout France.

There is none yet erected in this country; but negotiations are going on for their introduction here.

The cost of manufacture, based on the experience abroad, is said to be 62 cents a ton, over and above the cost of the slack. This figure includes coal-tar pitch, labor, repairs of machinery, oil, fuel, and general expenses. There is no question but that, where large waste-piles of lean coals, that is, non-coking coals, exist, the introduction of this system will start up a new industry, and turn into profit immense quantities of what otherwise would be worthless material. In France, the use of briquettes in blast-furnace practice is growing more and more. At the Bességes Works, they use 20 per cent briquettes to 80 coke, and claim to attain a maximum heat therewith in their Cowper stoves, and also to sensibly reduce the total consumption of fuel.

The machines are capable of turning out every imaginable size and shape of briquette, solid or perforated, as may be desired.

Those wishing further information regarding this system, may address the agency in this city, whose address will be found in our advertising columns.

THE MANUFACTURE AND COST OF COKE.

Written for the Engineering and Mining Journal by John Fulton.

An absence of several weeks in the Northwest and South has prevented an earlier reply to the articles on the "Manufacture and Cost of Coke," by Messrs. Howe and Koerner, which I shall now take up in order.

Your editor questions the "conventional figure of 1·6 tons of coal to produce one ton of coke," and demands figures from actual work. Reports from the coke-works for the month of September show as follows: Bennington, Alleghany Mountain District, $5803\frac{480}{2240}$ tons of coal used for coking, $3771\frac{1540}{2240}$ tons of coke made, showing a yield of 64·99 per cent. Wheeler Works, Connellsville region, 5609 tons of coal used for coking, 3605·8 gross tons of coke made, exhibiting a yield of 64·28 per cent. The 400 ovens at Morrell, and the 100 ovens at Mahoning, in the Connellsville field, show a slightly increased yield, but the difference is so slight that I regard the above as typical examples of work.

These statistics show that, to make a ton of coke at Bennington, 1·549 tons of coal were used, and at Connellsville 1·555 tons of coal to 1 ton of coke.

It may conduce to clearness to say that I do not contend for any special form of oven. I am defending a great principle in the production of coke, that, other things being equal, the manufacture of coke by internal direct heat, as in the familiar example of the bee-hive ovens, produces the best possibly quality of coke for blast-furnace use; that retort coking, with its conduction of heat through fire-brick walls, affords a less intense heat to the coking mass, producing a softer and consequently a less valuable quality of coke for blast-furnace purposes.

The economy of making coke by these two typical methods will appear during the progress of subsequent considerations.

It is also pertinent here to say that coke for blast-furnace use should be of the very best possible quality. The mere economy of saving a few units of carbon, or time in coking, if the result is of an inferior quality, would not be tolerated by any intelligent furnace manager, from the fact that he finds it *true economy* to use the best quality of coke fairly covering its cost of production in the price paid for it.

With the immense outspread of areas of good and fairly good coking coals of the United States of America, it is difficult to imagine why we should now worry over the problem of planning ovens to coke very inferior coking coals, as at best they can not be made to produce good coke under any oven treatment.

Dry coals, if compelled to be coked, require special ovens, after the plan of Thomas or McLanahan, where the charge of coke can be watered outside the oven and its heat sustained.

If Mr. Koerner insists on coking inferior coking coals, I will agree to the above modification of oven, provided the *internal direct heat*, as a prime principle, is preserved.

Mr. Howe questions Sir I. Lowthian Bell's conclusions in regard to the relative values of cokes made in bee-hive and retort ovens for blast-furnace use, and quotes the experiments of Sir Bernhard Samuelson as finding less difference in his furnace tests than Mr. Bell.

It will be noted that the latter has pursued the whole matter in a thorough manner, and that his laboratory tests are in entire harmony with the actual furnace work, demonstrating fully the conclusion arrived at, as follows:

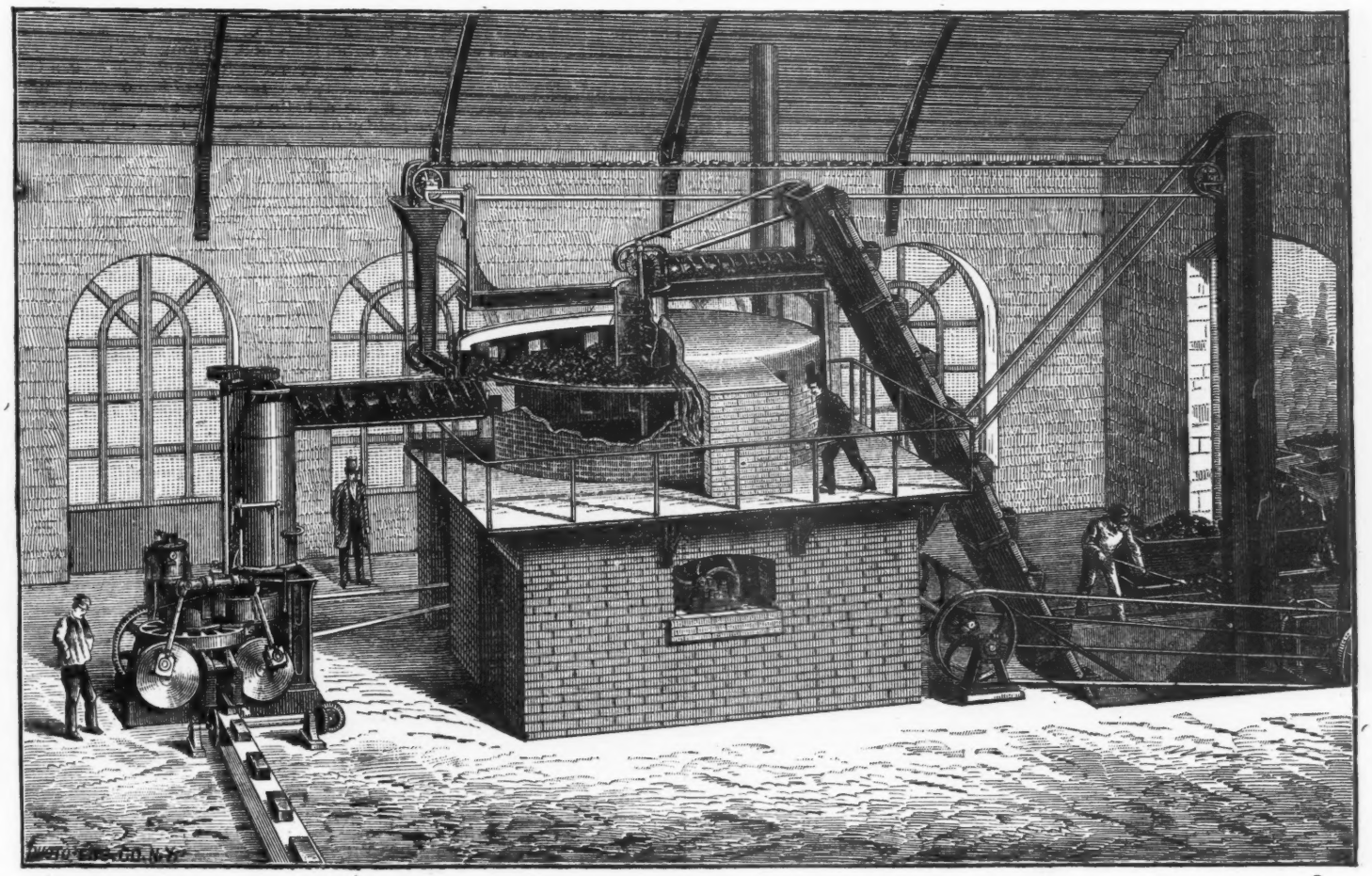
"On this computation, 25 cwts. (2800 pounds), the quantity consumed (Simon-Carvès oven coke) to produce a ton of No. 3 pig-iron, represents 33·33 cwts. of coal. If, on the other hand, 22½ cwts. (2520 pounds) of coke made in the bee-hive oven suffice to produce the ton of metal, the quantity of raw coal required to make this weight of coke, at a yield of 63 per cent, is 35·71 cwts. This would indicate that a large portion of the coal saved in the oven is lost when the coke comes to be used in the blast-furnace. If this view be correct, then the iron-smelter can afford to pay very little more for 25 cwts. of Simon-Carvès coke delivered at his works than he is accustomed to pay for 22½ cwts. of coke burnt in the bee-hive oven."*

In the discussion following the reading of Mr. Bell's paper, many important points were brought out. Our limit forbids the quotation of many of them. A few leading matters are quoted: Sir B. Samuelson testifies of Mr. Bell, "With respect to his facts, there could be no question because there was no one more capable of observing facts, and certainly no one more critical in controlling them, than Mr. Bell."

The writer is in entire harmony with Mr. Howe when he says that retort ovens afford a larger percentage of coke than the bee-hives. But he equalizes the whole matter in acknowledging that "bee-hive coke is somewhat harder than ordinary retort coke, because the coke is more highly heated by direct exposure to the burning gas in the bee-hive than it is in the retort, in which it is necessarily heated by conduction through a brick wall, a poor conductor."

The further suggestion that the heat of retort ovens can be brought

* Journal of the British Iron and Steel Institute, 1886, pages 70-71.



THE BIETRIX BRIQUETTE MACHINERY.

up to that of the bee-hive, is not yet accomplished. The age of prophecy has passed.

Mr. A. L. Steavenson remarks: "No ground for the much-vaunted saving of time in retort ovens, except at the cost of quality, which they refused to attempt in the bee-hive" (page 94).

Henry E. Armstrong, F.R.S., Professor of Chemistry. London Institute, submits: "From a chemist's point of view, the method followed in coking coal in Simon-Carvès oven is irrational in comparison with that followed when coking is performed in the bee hive oven."

Mr. Howe closes by suggesting the supplementary advantage of the retort oven in recovering by-products. Henry Aitken, of Falkirk, Scotland, visited the United States three years ago, and, after examining the Connellsville coke region and the markets for by-products in this country, gave the late Hon. D. J. Morrell, General Manager of the Cambria Iron Company, his opinion, that the time had not come for an effort at saving by-products in America!

In addition to the softer quality of retort coke, it is also made under greater pressure than bee-hive, and its cellular structure repressed.

The writer is pursuing a series of determinations in relation to the most desirable heat demanded in bee-hive ovens for the production of the best coke; as also the relative hardness of coke produced from the several varieties of coal.

Mr. F. Koerner, to put it mildly, misrepresents the present condition of mining and coking in the Connellsville region, which I think impeaches his subsequent statements. The only new plea now made is, that the retort ovens are adapted for coking the "lean coals of France." The question is now entirely relating to *American coals*.

The former article was designed to arrest the erroneous statements regarding the Connellsville region of coke manufacture, and having entered a protest against error, I have no further time to devote to mere controversy.

The relative economy of making coke in bee-hive and retort ovens is compared in Mr. Joseph D. Weeks's Coke Supplement, page 15. (Published at Pittsburg, Pa.)

As indicating the drift of the kind of oven mainly used by American manufacturers of coke, I submit the following table and statement from Mr. Weeks:

"From a table given, it appears that on the 1st of October, which may be regarded as the date of this table, though its revision has been continued up to the date of going to press, there were 245 establishments in the United States at which coke was made; the total number of ovens was 24,347, of which 23,753 were bee-hive ovens, 80 were drag, 34 Thomas, and 80 double, making a total of 23,947 ovens on the general bee-hive plan, or those constructed on the plan of coking by internal heat, leaving but 400 ovens in the United States constructed on the Belgian plan of coking, that is, in part by internal heat applied through flues in the walls. *Most of these 400 ovens are idle.*"

JOHNSTOWN, PA., Dec. 7.

THE IRON INDUSTRY IN SAN SALVADOR.

The principal mine in the republic is known as the Cobano. The ore is smelted in the furnaces of the San José smelting-works, also the property of the owners of the mine, the distance between the mine and smelting-works being three miles. The mineral is extracted from near the surface only; the veins that go downward are not followed, as that would cause expenses that at present are unnecessary, consequently there are no shafts sunk or galleries excavated. The land on which the mine is situated is a hill of about fifty acres in extent, on which veins are found on nearly all sides. The quality of the ore is of the best; carbonates and oxides of iron of 70 per cent, though yielding only 30 per cent in the furnace. The mine has been worked for over a century, and is considered by its owners to be inexhaustible. Even were the veins to give out, there are other hills close by in which the ore is found of the same richness. The process of smelting is the one called Catalan—a method that has not suffered the slightest modification since the Spaniards first inaugurated it. The only machinery is a water wheel that works a hammer weighing about 9 or 10 cwt., used to beat the iron into the shape in which it is sold, that of bars 3 inches wide by half an inch thick. As to the wages of laborers, we must separate the employés of the mine from those of the furnace and hammer. The miners are simple peons or laborers, who work with picks and bars, etc., and who receive $1.50 a week plus their board. As an economical measure, the employers generally make contracts, paying at the rate of $2.50 a ton for ore placed at the entrance to the diggings. The carriage from the mines to the furnace costs $1 a ton. In each furnace, it is necessary to have a master and assistant, who work night and day from Monday to Saturday, taking rest by turns, according to the phases that the smelting takes, which at times needs the vigilance of the master and at others only that of the adjutants; each earns according to the quantity of iron turned out, the master at the rate of $5.62 per ton of iron, and the adjutant half of that sum. As the furnaces are independent of each other, any number can be established, as long as there is sufficient water to produce the necessary amount of expelling force. In the smelting-works of San José, there are three furnaces, and the employés are six in number. There are neither local nor government taxes, and the iron can be trafficked free of duty. All the iron worked is consumed locally, at the rate of $8 per quintal, this price rising at times to $10. The purchasers dispose of it in various parts of the republic and Guatemala and Honduras. It is employed entirely in the manufacture of machetes, axes, plow-heads, and other agricultural implements. The great drawback to mining operations on a large scale in San Salvador is the lack of coal. Oak charcoal is the substitute there, most of the smelting-works being in the vicinity of large oak forests.

Coal in China.—The Shanghai *Hupao* says: A certain foreign mining engineer has estimated that in the province of Shanse there are 22,000,000 square *lis* of coal mine, from which 730,000,000,000 tons of coal can be obtained. And as 300,000,000 tons of coal are consumed yearly by all the nations of the world, the coal in Shanse Province would be sufficient to supply the whole world for a period of 2433 years.

Eads's Ship Railroad Scheme.—Captain James B. Eads has stated that the men interested in his Panama ship railroad scheme have decided to abandon the acceptance of governmental aid trammeled by governmental restrictions, and have concluded to form a private corporation. For means to carry the immense enterprise to a successful termination, an appeal for financial aid will be made to all the great money centers of the world. The ship railroad company will be international in its scope and international in its membership. At the present session of Congress, that body will be asked to charter the new organization, when the process of securing money will be pushed with energy.

New Speed Indicator.—M. Auguste Hermite proposes the use of intermittent light to indicate the speed of engines or other turning bodies. His plan is to illumine a Geissler tube by the sparks of an induction coil, giving a constant and known vibration per second, say, from 30 to 40, each vibration giving a corresponding flash of the Geissler tube. By optically arresting the moving objects at different points of their course, he proposes to obtain their speed. For example, if a disk of cardboard be made to revolve by clock-work at a uniform and known speed, say one turn per second, and if it be lighted by the Geissler tube giving 30 flashes per second, the disk will be seen 30 times per second, that is, while it makes one revolution; and if there be a visible spot on the surface, thirty spots will be seen. If the disk turns ten times per second, the succession of images will disappear, owing to the persistence of impressions on the retina, the disk will appear to be immovable, and three spots will be seen on the circumference occupying fixed positions. If the number of turns of the disk be equal to the number of flashes of the Geissler tube, the disk will be seen to be immovable. A printed page revolved in this way could be read as if it were fixed.

Drilling Artesian Wells in China.—The following interesting description of the process adopted in China for drilling artesian wells is given by Abbé Huc: "If there be a depth of three or four feet of soil on the surface, they plant in this a tube of hollow wood, surmounted with a stone in which an orifice of the desired size of three or four inches has been cut. Upon this, they bring to work in the tube a rammer of 300 or 400 pounds weight, which is notched and made a little concave above and convex below. A strong man, very lightly dressed, then mounts on a scaffolding and dances all the morning on a kind of lever that raises this rammer about two feet and then lets it fall by its own weight. From time to time, a few pails of water are thrown into the hole, to soften the rock and reduce it to pulp. The rammer is suspended to a rattan cord not thicker than your finger, but as strong as our ropes of catgut. This cord is fixed to the lever, and a triangular piece of wood is attached to it, by which another man sitting near gives it a half-turn, so as to make the rammer fall in another direction. At noon, this man mounts on the scaffold and relieves his comrade till the evening: and at night, these two are replaced by another pair of workmen. When they have bored three inches, they draw up the tube, with all the matter it is loaded with, by means of a great cylinder, which serves to roll the cord on. In this manner, these little wells or tubes are made quite perpendicular—to a depth of from 1500 to 1800 feet, and as polished as glass. When the rock is good, the work advances at the rate of two feet in twenty-four hours, so that about three years are required to dig a well."

The Tin Deposits of New South Wales.—At a meeting of the Royal Society of New South Wales in August, the society's medal and prize of £25 was presented to Mr. S. Herbert Cox, F.C.S., F.G.S., for his prize essay on the Tin Deposits of New South Wales. The principal deposits occur in New England as impregnations, segregation veins, and lodes in granite, also as gash veins in Silurian slates, and as a net-work of veins or stock-work in haplite. The granite eruption occurred not later than Carboniferous times, and no sedimentary strata appear to have been deposited until the Tertiary period, when the leads of alluvial tin were formed, together with their associated gravels. Denudation on an enormous scale has gone on, and the Silurian slates that rest on the granites have only been preserved as outlying patches included in folds in the granite. Dikes of feldspar and quartz porphyry traverse both the granite and the slates; but the date of this eruption is probably Tertiary, although evidence appears to point out that this acidic only preceded the ensuing basaltic eruption by a short time. The more fluid basalt flowed for considerable distances, frequently burying the gravels of the river-beds with the tin they contained, and preserving these "deep leads" from subsequent denudation. True lodes appear to be rare, but some remarkable impregnated areas exist in greisen; "segregation" veins of small size are found in the granite, and in the slate "gash" veins up to 4 inches in width occur, but these are certainly not true lodes. Fortunately, wolfram occurs in separate veins from the tin; copper and iron pyrites, fluor-spar, tourmaline, white mica, and topaz are common; beryl forms a rock with quartz, through which tinstone is impregnated. In the alluvial deposits, tinstone is found associated with diamonds, sapphires, zircon, etc. The greater quantity of the tinstone hitherto raised has been from the alluvial, and the "deep leads" that are still worked, and will probably be greatly developed in the future, closely correspond in their course with the shallow ones. They are worked to depths of from 140 to 180 feet, and are frequently found below solid floes of basalt. A yield of 5 per cent tin in lodes, and from ¼ to 1 cwt. per cubic yard in deep alluvial deposits, pays for extraction. The total output of tin between 1872 and 1883 is 64,794 tons of ingots, and 13,268 tons of black tin.

PATENTS GRANTED BY THE UNITED STATES PATENT-OFFICE.

GRANTED NOVEMBER 30TH, 1886.

353,342. Gas-Regulator. Moses G. Wilder, Philadelphia, Pa.
353,362. Process of Distilling Petroleum. George H. Kline, Pamrapo, New Jersey. Assignor of one half to A. C. Henderson, Brooklyn, New York.
353,438. Miner's Safety-Lamp. August J. Becker, Mount Carmel, Pa.
353,446. Automatic Compressed Air-Brake. Amasa S. Goode, Old Frame, Pa.
353,448. Machine for Working Fire-Clay. James H. Green, St. Louis, Mo.
353,474. Furnace. John H. Westmyer, Harrisburg, Pa.
353,488. Tamp for Blasting. William Galloway, Cardiff, County of Glamorgan, England.
353,490. Double-Tube Injector. John R. Gorhring, Philadelphia, Pa., Assignor to Henry Belfield and T. Broom Belfield, both of same place.
353,515. Concentrating-Pan. Magnus Swenson, Fort Scott, Kansas.
353,548. Gas-Regulator. Benjamin Franklin, Bradford, Pa., Assignor of one half to Solomon R. Dresser, of same place.
353,580. Pipe-Coupling. Joshua Nuttall, Pittsburg, Pa.

PERSONALS.

The Berlin University has an attendance of 537 students, including 149 Americans. This is the highest number attained in the history of the institution.

Messrs. Hodges and Olcott, the commissioners who are at work in Cerro de Pasco, under the Grace contract, are said to be discovering extensive lodes of rich ores.

It is rumored that even "Slippery Jim" Fair was squeezed in the recent Comstock boom, having gone "short" on his expressed opinion that the mines have no value. His old partners, Flood and Mackay, are credited with the corner that sent the market up and drew $4,000,000 from the San Francisco savings-banks.

FURNACE, MILL, AND FACTORY.

The Dayton Coal and Iron Company, Dayton, Tenn., is relining No. 2 furnace from 20 feet to 18 feet with different lines.

The spring and axle department of Singer, Nimick & Co.'s extensive steel-works at Pittsburg, Pa., were destroyed by fire on the 4th inst.

The Pennsylvania Pipe Manufacturing Company, of Philadelphia, Pa., capital $60,000, has received a charter.

Messrs. Moses Brothers have started a subscription-list for a 100-ton iron furnace to be located at Montgomery, Ala.

The New York Contract Company, Jersey City, New Jersey, has been incorporated with a capital stock of $100,000, by Julius Lipman and others, to construct water-works, etc.

The Water-Works Trustees, Cleveland, Ohio, have awarded the contract for pumping-engines to the Knowles Steam-Pump Works, of Boston and New York, at $79,000.

The contract for the iron-work of the Carnegie Library, Braddock, Pa., has been awarded to the Keystone Bridge Company, of Pittsburg. The total cost of the building will be about $80,000.

The Western Nail Association, at the meeting at Cincinnati, Ohio, on the 8th inst., unanimously advanced the card price of nails to $2.40, with the usual terms.

The new blast-furnace plant erected by Gordon, Strobel & Laureau, of Philadelphia, Pa., for the Western Steel Company, of St. Louis, has been blown in and works successfully in every respect.

The Sheffield Pipe and Nail Company has been organized at Sheffield, Ala., to erect large works for the purpose of making cast and wrought-iron piping, bolts, nuts, nails, screws, and other articles made of iron and steel. The capital stock is $100,000.

The committee selected by the Centralia Iron and Nail Company, Centralia, Ill., to go East and examine steel plants with the view of purchasing one for its own works, as mentioned in our last issue, have contracted with a Philadelphia firm to erect such works at Centralia.

Messrs. H. R. Worthington & Co., of New York City, have contracted with the Davenport Water Company, Davenport, Iowa, to furnish a high duty pumping-engine, capacity 6,000,000 gallons in twenty-four hours, at $30,000. The engine is to be ready for operation June 1st, 1887.

The Morgan Iron-Works, owned by shipbuilder John Roach, comprising thirty-three lots and buildings on the east side of Avenue D, and on Ninth and Tenth streets, New York, were sold at auction on the 9th inst., excepting eleven lots, which had been disposed of at private sale, for $233,600.

The Seibel-Suessdorff Copper and Sheet-Iron Manufacturing Company, St. Louis, Mo., is building a new brewery for the Heim Brewing Company, Kansas City, consisting of mash-tank, rice-tank, boiling-kettle of 256 barrels capacity, two large copper coolers, etc., and a mash-tank and boiling-kettle with a lot of tanks, piping, etc., for the Grone Brewing Company, St. Louis.

The M. C. Bullock Manufacturing Company, Chicago, Ill., shipped to the Union Stool Company, of Chicago, three special No. 15 portable "band friction" hoisting-machines; to the Troy Edison Electric Light Company, one (100 horse-power) straight-line engine; to the Mammoth Gold Mining Company, Tucson, Arizona, one No. 13 portable "band friction" hoisting-machine with wire rope sheaves, etc.; to the Mugwump Mining Company (Silver), and Eureka Mining Company (Silver), Rapid City, Dakota, one No. 9 portable "band friction" hoisting-machine, boiler, sheaves, etc.; to the Menominee Mining Company, for the Chapin line, at Iron Mountain, Mich., two plants of direct-hoisting machinery, each consisting of a pair of 30 by 60 Corliss engines, a pair of cone drums, 14½ feet diameter at the large end and 10 feet at the small end. The drums are driven by a Lane band friction driving band arranged to run in balance, one drum unwinding and lowering the empty cage, while the other drum winds up, hoisting a load of six tons of ore (besides the weight of cage and rope) at a speed of twelve hundred feet a minute.

BIDS ON CONTRACTS.

DREDGING.—Lieut.-Col. McFarland, U. S. Engineers, New York City, has received the following bids for improving the channel between Staten Island and New Jersey. The total amount of material to be removed is about 70,000 cubic yards, measured in the scows. The following were the bidders: William H. Beard, Brooklyn, 33½c. per cubic yard, $23,450; Elijah Brainard, New York City, 37c., $25,900; Thomas H. Benton, 29⅛c., $20,912.50; P. Sanford Ross, Jersey City, 32c., $22,400.

STONE.—Capt. R. L. Hoxie, U. S. Engineers, Pensacola, Fla., has received the following bids for rock for construction of jetties at Fort McKee, Fla.: Francis H. Smith, New York City, Class No. 1 per ton $3.94, Class No. 2 per ton $3.94, Class No. 3 per ton $4.94. Class No. 1 calls for 1600 tons net of stone in angular fragments weighing not less than one ton, nor more than two tons each. Class No. 2 calls for 1400 tons net in angular fragments of stone weighing from 40 to 250 pounds each. Class No. 3, 150 tons net of broken stone measuring not more than two inches in largest dimension.

DREDGING.—Capt. W. H. Bixby, U. S. Engineers, Wilmington, N. C., has received the following bids for dredging in Mosquito Creek: Charles H. Lewis, Baltimore, Md., 40c. per cubic yard (irregularities: there is no guarantee); Rittenhouse Moore, Mobile, Ala., 37c. per cubic yard.

DREDGING.—The Department of Docks, New York City, has received the following bids for dredging at nine piers and bulkheads on the East and North Rivers, estimated at 108,560 cubic yards: Union Dredging Company, 20 cents per cubic yard; Morris & Cummings, 22½ cents per cubic yard. Contract awarded to first named.

ELECTRIC PLANT.—The Navy Department has received the following bids to furnish an electric plant and fixtures for the cruiser. Chicago: Edison Company, vertical 12 by 9, or Armstrong & Siemens 12½ by 10, $8280; Brush Electric Company, "Brotherhood" 8-inch, $11,380, and Armstrong & Siemens, $10,020; United States Electric Light Company, Armstrong & Siemens, 12½ by 10, $13,775; Sawyer-Man Electric Company, Armstrong & Siemens, 10 by 9, $20,958.34; Westinghouse, 9½ by 9, $20,708.34; Westinghouse, 8½ by 8, $20,458, and Straight Line, $21,458.34; and Mather Electric Company, Armstrong & Siemens, 12½ by 10, $10,632.50. The bids on fixtures alone were: Mitchell, Vance & Co., $1468.68, and William P. Page & Co., $2133.80. There are now five vessels of the navy lighted by electricity—the Boston, Atlanta, Dolphin, Trenton, and Omaha. The contractor on each of them has had a losing job.

LABOR AND WAGES.

To the coal miners at Mineral Ridge, near Youngstown, Ohio, on the 6th inst. was conceded the advance of ten cents a ton, for which they lately struck.

The lock-out at the Excelsior Colliery, Shamokin, Pa., which began a month ago, was ended on the 6th inst., through arbitration, the miners receiving an advance of five per cent. Work has been resumed.

The coal miners' strike at Marshall, Colo., is ended. The following scale of wages has been agreed upon: Sixty-one cents, filling all coal and furnish tools, powder, oil, etc.; $5, room turning; $2.25, face entry; $2.50, butt entry; $2.75, butt entry, double shift.

Delegates representing eleven mines in the Mahoning Valley, Ohio, met at Youngstown on the 8th inst., and decided that, unless an advance of 10 cents a ton is conceded on or before Friday next, all miners shall cease work. A committee was appointed to visit the operators and get their views.

The colored men imported from the South several months ago to take the places of striking white miners at the Grape Creek Company's mines at Danville, Illinois, struck on the 6th inst. for 75 cents a ton for mining. They had been working by the day, but were notified on the 4th that they would henceforth only receive 65 cents a ton.

COAL TRADE NOTES.

In the Third District Court at Salt Lake City, Utah, last week, a jury rendered a verdict for $20,000 in favor of W. C. Redden against the Union Pacific Railroad Company. Redden sued for $25,000 damages for injuries sustained while at work in a coal mine qelonging to the company in May, 1885.

MARYLAND.

The case of Albert Holle *vs.* the Consolidation Coal Company, of Alleghany County, $2500 for damage of property, to which we referred last week, was concluded on the 4th inst. by a verdict for the plaintiff for $500.

MINNESOTA.

It is stated that the question of fuel necessary for the manufacture of pig-iron at Duluth has been solved. One of the largest coal companies doing business at Duluth recently made a proposition to enter into a contract to bring coal there and manufacture all the coke required at the same price the steel mills at Chicago pay for coke delivered there. The cost of ore at Duluth will average $1.50 a ton less than at Chicago. A proposition has recently been made by responsible parties to erect at Duluth three modern blast-furnaces, Bessemer plant, rail mill, and every thing complete with all modern improvements, having a capacity of 500 tons a day, and which will cost $1,000,000.

PENNSYLVANIA.

ANTHRACITE.

The largest deal made in coal lands in this State for many years was consummated last week, by which the Pennsylvania Railroad Company, under the name of the Mineral Mining Company, became the purchaser of the Borie lands on Broad Mountain, paying K. C. Hayden the handsome bonus of $250,000 for it. A. J. Womelsdorf, a Pottsville mining engineer, gets $31,000 in commissions. When fully opened, these lands, it is estimated, will give an annual tonnage of at least 500,000, or even 1,000,000 tons.

A cave-in occurred at the Fairmount Colliery, at Cork Lane, near Pittston, operated by Dr. H. P. Rice, on the 4th inst., which caused great excitement for the time. Three houses were completely demolished, the inmates barely escaping with their lives, though no one was injured. The cave-in covers an area of one and a half acres; the surface has settled some fifteen feet. The cause of the accident is attributed to the robbing of pillars in the mine underneath. Last May, a similar cave-in took place at this mine, but it was not so disastrous. The mine, which is pretty well worked out, was then abandoned, but about two months ago it was again opened.

It is reported that an eight-foot vein has been struck on the Big Mountain. The seam was discovered on the tract of the Northumberland Coal Company, five miles north of Mount Carmel, and is said to equal in quality the celebrated red ash found in that district. It is thought that the immense tract will be opened up next spring. Prospectors are at work.

BITUMINOUS.

The Barclay Coal Company reports $5282 income from rent of railroad and royalty on coal for November.

SOUTH AMERICA.

CHILI.

Large deposits of coal, said to be of very superior quality, have just been discovered on the island of Chiloe, belonging to Chili.

TENNESSEE.

The official report of the Tennessee Coal, Iron, and Railroad Company for November shows that there were received directly from the mines 10,979 tons of coal, and 11,904 tons of coke for the month, and 119,196 tons of coal and 124,038 tons of coke from January 1st.

TEXAS.

Telegraphic advices announce the discovery of coal in Henderson and Smith counties. In the former county, coal was struck at a depth of 30 feet.

VIRGINIA.

The Stock Creek Coal and Iron Company has sold its property in Scott County to the Baily Construction Company, of Boston.

WEST VIRGINIA.

The New River Coke Company, Caperton, will soon erect 150 coke-ovens.

GAS AND OIL NOTES.

Exports of refined, crude, and naphtha from the following ports, from January 1st to December 4th :

	1886. Gallons.	1885. Gallons.
From Boston	5,266,642	8,120,887
Philadelphia	141,331,111	142,272,537
Baltimore	14,578,060	10,520,087
Perth Amboy	5,648,102	. . . . .
New York	368,079,715	344,752,199
Total exports	534,903,630	505,665,710

OHIO.

The great trunk line of the Columbia Gas-Light and Fuel Company, of Franklin, has been completed to Sharon, with a branch to Youngstown, from the gas wells ten miles east of Franklin. Gas was turned into the pipes on the 2d inst. from the four great gas wells owned by the company, with a pressure of 500 pounds to the square inch, and the people of Youngstown and Sharon enjoyed for the first time the conveniences and comforts of natural gas as a fuel. The new line will also supply the borough of Mercer with fuel and construct a line to Greenville.

PENNSYLVANIA.

For the purpose of saving the payments of taxes on the full amount of the capital stock, four of the original natural gas companies of Pittsburg have notified the State Department of an intended reduction of their capital stock. The Fuel Gas Company, from $100,000 to $10,000 ; Penn Fuel Company, from $200,000 to $10,000 ; Acme E. B. Company, from $35,000 to $10,000 ; Carpenter Natural Gas Company, from $200,000 to $10,000. These are the companies that have been absorbed by the Philadelphia & Pennsylvania Company.

GENERAL MINING NEWS.

ALABAMA.

COLBERT COUNTY.

SHEFFIELD LAND, IRON, AND COAL COMPANY.—At a meeting held last week, at Sheffield, the capital stock was increased from $860,000 to $1,000,000. The agreement between this company and the Alabama & Tennessee Coal and Iron Company for the erection of three large blast-furnaces by the latter at Sheffield was ratified. In addition to this, the former company has two large blast-furnaces under contract, one of which is erecting. The Memphis & Charleston Railroad Company has, upon certain conditions, decided to run its line through Sheffield, and proposes to erect its principal shops there. The stock of the Sheffield Land, Iron, and Coal Company on the 1st inst. was quoted at $235.

AUSTRALIA.

Dispatches from Adelaide state that large findings of gold have been made in the South Australian diggings in the region of Teetulpa, and that 5000 men are already congregated in that one locality. The largest nugget yet found is said to have weighed thirty ounces.

CALIFORNIA.

AMADOR COUNTY.

PLYMOUTH CONSOLIDATED.—It is officially announced that the company has resolved to add forty stamps to the Pacific mill. This will increase the power to 160 stamps. The company has already contracted for the work to be done. It is expected that new stamps will be in operation within four months. This improvement will largely increase the production, and will cause no interference with dividends. The cost will be paid out of the cash surplus.

MONO COUNTY—BODIE DISTRICT.

Reports for the week ended November 27th :

BULWER.—The north drift, east ledge, 100-foot level, shows the vein to have 14 inches wide of fair ore. North drift, 200-foot level, shows one foot of ore. North uprise, 100-foot level, was extended 17 feet. The vein at this point was 2½ feet wide of fair milling ore. There were shipped to the mill 385 tons of ore ; average pulp assay, $18.50.

CONSOLIDATED PACIFIC.—At this mine, prospecting is always going on, and other work is prosecuted to a greater or lesser extent. The company has a large dump of ore. Arrangements have been perfected to begin working 100 tons of this ore at one of the mills, as it comes from the dump, as a practical test of just how and what the ore will mill. If this test proves a success, it is not improbable that the working of ore will become regular.

STANDARD.—The appearance of the ore-bodies is very favorable. There were shipped to the mill 403 tons of ore during the week. The Standard side of the mill is running steadily.

COLORADO.

CLEAR CREEK COUNTY.

CENTRAL AMERICA.—A fourth interest in this lode, Montana Mining District, has been sold for $1000.

HUCKLEBERRY.—Mr. H. M. Griffin, owner of the Seventy-Thirty and many other mines, has purchased this lode in the Argentine Mining District.

COLORADO CENTRAL CONSOLIDATED.—We have been officially advised that the product for November was 111 tons of ore, which sold for $20,227. The main shaft is down twenty feet below the 650-foot level.

GILPIN COUNTY.

CALIFORNIA, LIMITED.—The 1600-foot level is extending west, so as to get under the body of pay found in the Hidden Treasure workings. This work is necessarily very slow, owing to the bad condition of the side level.

CHARTER OAK CONSOLIDATED.—This company, which is a St. Louis corporation, has a plant of machinery on the way from the East. At the mine, the shaft is down 300 feet.

COURTLAND.—But very little is done on the Quaker City property of this company, outside of sinking the main shaft, which is done by contract.

LAKE COUNTY.

From the Leadville *Herald-Democrat*, we condense the following :

ADAMS.—The company has contracted with the La Plata Smelting Company for one thousand tons of its product, to be delivered by January first.

AGASSIZ.—At present, little mineral is extracted at the Wolfe Tone mine, except sulphides, which are sold to both Leadville and valley smelters. A limited amout of carbonate ore is daily sent to the Colorado smelter, at Pueblo, but even these shipments will soon be stopped unless better prices are offered. The concentrating mill at the mine is improving and enlarging, and within a fortnight an additional set of rolls, four new trommels, and four additional jigs will be in running order. The concentrating mill will then have ten jigs in operation. For months past, the jigs have been running on carbonate and oxidized ores ; but with the completion of the improvements now under way, the sulphide ore will be dressed, and, through the elimination of the gangue and zinc, this ore will be made quite marketable.

ALLEGHANY.—St. Louis capital has been secured for the development of this property on Yankee Hill.

GREAT HOPES.—The stock of this company, it is reported, is placed in St. Louis at $2.50 a share. The company consists, as we have already mentioned, of the May Queen, Pittsburg, Surprise, Amie, Climax, and Hibernia claims, which are now worked under lease.

MANVILLE.—The smelting-works are running three furnaces steadily. The establishment is receiving a great deal of sulphide ore, which is calcined in a large roasting-furnace. The bullion production exceeds a car-load a day. Among the accomplishments of Mr. Warner, the superintendent of the works, was the recent reduction of about eight hundred tons of flue-dust, smelting it without the admixture of oxidized ores. Nothing but fuel and fluxing materials were fed into the furnaces during the entire run, and a perfectly clean slag was made.

MORNING STAR CONSOLIDATED.—The manager's monthly report for November shows a total production of 3133 tons. The shipment embraced 2827 tons of silver-lead ore, and 906 tons of argentiferous iron ore. The production for a short time to come will not be as large as it has been in the past, yet will be fair. The incline from the foot of the McHarg shaft on the Waterloo lode will, in about two weeks, have attained sufficient depth to permit the driving of additional levels in the vicinity of the water-line. As soon as this drift is driven, a large block of high-grade ore will be ready for extraction, and heavy stoping will be resumed. The ore can then be mined more economically.

SILVER CORD.—The production during November exceeded 800 tons. The entire product was the result of tribute-work, sixteen different leases being in force on the property, covering all the old workings. Considerable prospect-work is doing by the lessees and by the company in the old workings in the eastern portion of the territory.

WILLIAM WALLACE.—This mine, on Carbonate Hill, under lease to J. S. Jones, has begun to send ore to the Leadville smelters. Shipments are still light.

PITKIN COUNTY.

The much talked of mining suit between the apex and side-line owners of Aspen was to be called in the United States Courts at Denver on the 6th inst. Judge Brewer may probably sit with Judge Hallett in the case.

DAKOTA.

LAWRENCE COUNTY.

CALEDONIA.—The official report of the superintendent for the week ended November 29th shows that 426 tons of ore were produced from the 300-foot level, and 1218 tons from other sources, making a total of 1644 tons. The statement, as made in our last issue, that this company had levied an assessment, is not correct.

IRON HILL.—It is reported that the drill has tapped an ore-body of considerable extent in the south drift of the 300-foot level. The drill, after boring to a distance of 212 feet, passed through about forty feet of good milling ore, when the operations in that direction were suspended, and drilling began at another point on the same level. The shaft has reached a depth of 380 feet, and sinking is still going on. Drifting will soon begin. The smelter was to start up again as soon as a sufficient amount of coke had been received, and it is probably running now.

PENNINGTON COUNTY.

HARNEY PEAK.—Systematic development has begun on the Etta, for which a government patent has been received, says the Rapid City *Republican*. A double-compartment shaft is to be started from the lower tunnel 185 feet below the surface, where a station is to be excavated and timbered for placing the necessary hoisting and pumping machinery, to go to a depth of 500 feet. Stations are to be made every 100 feet for driving cross-cuts to explore the country. Work is also done on many other locations. The initial steps have been taken for procuring United States patents to the whole property, some seventy-five claims. It is now the intention of the company to secure government titles before beginning extensive developments on the claims.

IDAHO.

KING OF THE WEST.—This mine, in Smoky District, has been bonded to J. B. Haggin, of San Francisco, for $40,000, to be paid on or before January 1st, 1887, when the bond will expire. The mine is but slightly developed. It is tributary to Ketchum.

PHILADELPHIA.—The furnace has started up, and will in all probability be kept in full blast the remainder of the year. A large amount of ore has been received, since the closing down last month to extend the hight of the stack and make other necessary improvements and repairs.

SILVER KING.—This group of mines, on the East Fork of Lost River, which was recently reported upon for a syndicate of English capitalists, has been purchased by it. The property embraces eight different locations.

ILLINOIS.

YUMA COPPER AND SILVER MINING COMPANY.—This company has been organized at East St. Louis, with a capital stock of $5,000,000 ; incorporators, Alfred Berkey, Henry C. Girke, and Thomas A. Russell.

INDIAN TERRITORY.

CHOCTAW NATION.

The discovery of gold near Oklohama is reported. About 300 claims have been staked out and are worked.

MEXICO.

A company of Americans has been formed for washing a hill of gold-bearing gravel near Santo Domingo, Chihuahua. It intends to raise water from the Conchos River by steam, to a large tank on the hill, from which it can work sluices in several directions.

CUSIHUIRIACHIC.—This company is in financial difficulties, and needs some $150,000 to meet obligations. A circular dated November 24th has been issued to the stockholders asking them to contribute not only their proper share of the funds called for, but, by

taking a share of the outstanding bonds proportionate to their holdings of stock, to keep their interests in the property represented by the bonds as well as in the stock; so that, in any contingency by which the property might fall into the hands of the bondholders, whoever now desires to protect his interest in the enterprise may do so upon the same basis with those who have hitherto been its chief financial supporters. Reports received later than the date of this circular state that the ore has increased in richness, and prospects have brightened, though not so as to obviate the necessity of contributions from the shareholders.

MICHIGAN.

A correspondent sends us the following:

ROPES.—A correspondent sends us the following: The monthly report of this gold and silver mining company shows the November product of the 25-stamp mill to have been $4357, of which $3138 was in bullion, and $1219 in concentrates. Only 595 tons of rock were milled, the month's run being twenty-eight days. This gives the average product at $7.30 a ton. The cost of running the mine and mill is from $3000 to $3500 a month. There has been a small profit every month but one for the past half-year. At the annual meeting of the stockholders next March, the profits of the year's working will be devoted to enlarging the capacity of the mill. The rock is low-grade, but is found in immense quantities, and a 100-stamp mill could net a profit of from ten to twelve thousand dollars a month. The mine, which is 3½ miles from Ishpeming, and the only gold mine in Michigan, was discovered five years ago, but the new mill has been running only two years. An effort will probably be made soon to have the stock listed, in a New York or Boston Stock Exchange, presumably the former. About $150,000 have been invested in the mine so far.

COPPER MINES.

The following statement gives the products of the mines mentioned for November and for eleven months, and a comparison with the outputs of the same mines in the two preceding years:

	November			Jan. 1 to Nov. 30.		
	1886 Tons.	1885. Tons.	1884. Tons.	1886. Tons.	1885. Tons.	1884. Tons.
Calumet & Hecla	2,373	2.366	2,126	27,771	27,858	26,402
Quincy	473	636	450	3,228	3,911	3,183
Franklin	335	223	289	2,402	2,127	2,075
Tamarack	215			2,181	....	....
Osceola	182	81	204	1,857	971	2,299
Huron	111	126	125	1.177	1,212	1,250
Atlantic	*	203	180	1,926	2,257	1,920

* Report not received.

The directors of the Osceola and Tamarack mining companies have adopted a vote instructing their officers not to sign stock certificates in blank—a common practice, which has resulted disastrously, in at least one instance, of late.

CALUMET & HECLA.—Arrangements are making at the company's Hecla mill, Lake Linden, to raise the rock-bins about four feet, in order to make the five heads in the mill self feeding. This improvement will reduce the number of attendants of each head from ten to four, making a material reduction in the labor expense of the mill.

PENINSULA.—Operations have been suspended at this mine, owing, it is said, to a lack of funds to carry on operations. When the company was reorganized, the capital stock was reduced from $2,500,000 to $1,000,000, in shares of $25 each, and the stock made non-assessable. There were only a few thousand dollars in the treasury, says the Houghton *Mining Gazette*, when work was begun. The mine was then filled with water, and a machinery plant that needed overhauling, all of which took money, and the sum received from the sale of lands was nearly exhausted before mining operations began. When the mine was emptied, it was found that, under the preceding management, no opening up ahead had been done, and the new company was therefore without ground to work in except such as was opened from day to day, and with no money to expend for that class of work.

RIDGE.—A force of miners has started work for the winter in this mine. The mine is unwatering.

TAMARACK.—It is reported that the winze sinking below the fifth level is richer than any thing that they have had since the mine started.

IRON MINES.

The following statement, given by the Marquette *Mining Journal*, shows the amount of iron ore shipped from the ports of the districts given below, for the season of 1886, up to and including Wednesday, November 24th:

	Tons.
Marquette—Marquette District	850,586
St. Ignace— " "	73,293
Escanaba— " "	667,575
Menominee District	871,246
Grand total of lake shipments	2,452,700

Shipments of Pig-Iron.

Pioneer furnace, Marquette	5,815
Pioneer furnace, Escanaba	9,780
Deer Lake furnace	2,235
Vulcan furnace	16,903
	34,733

The gain over the shipments from the above ports, during the same period in 1885, is 369,269 gross tons.

The amounts of iron ore shipped by lake by eight of the larger producers of the Lake Superior region is as follows:

Name of Mine.	Gross tons.
Lake Superior, Marquette District	249,786
Republic, " "	241,162
Cleveland, " "	209,866
Champion, " "	129,024
Chapin, Menominee District	195,915
Vulcan, " "	143,312
Colby, Gogebic District	248,810
Norrie, " "	110,715
	1,528,590

The aggregate production of these mines is more than half the entire output of all the Lake Superior mines this year. The shipping season of 1886 as to lake transportation has been closed.

MENOMINEE IRON MINING COMPANY.—The negotiations that have been pending for some time past between this company and a number of Youngstown (Ohio) capitalists, for the controlling interest have been consummated. The Youngstown people several months ago purchased 49 per cent, or a little less than a half-interest in the mine. The mine, which had practically been abandoned some four years ago, was at once pumped out, and a small force has since been engaged in mining. The present owners are the Brier Hill Iron and Coal Company, Henry Todd, J. G. Butler, Jr., Tod Ford, and their associates. They are all large consumers of ore, and will use the most of the product of the mine.

MISSOURI.

BENTON COUNTY.

A company has leased for twenty years 154 acres of land near the Osage River, and is engaged in mining and prospecting with prospects of opening up a paying mine.

JACKSON COUNTY.

KANSAS CITY SMELTING AND REFINING COMPANY.—The fire at these works, to which we referred in our last issue, destroyed the building containing the smelting and furnace-rooms. Loss about $25,000.

JASPER COUNTY.

OSWEGO.—For the first time in five years, the water is out of the old King Robinson shaft on this company's ground, and work has begun preparatory to active resumption of operations. The shaft is 120 feet deep.

ST. FRANÇOIS COUNTY.

DOE RUN LEAD COMPANY.—This company has been organized with a capital stock of $200,000, shares $100 each, for the purpose of mining lead ore on the Merrimann land, about six miles southwest of Farmington, and making pig-lead and manufacturing any of the products of pig-lead.

MONTANA.

LADY LEITH GOLD AND SILVER MINING COMPANY.—This company has been organized with a capital stock of $1,000,000, shares $2 each, by Charles B. Leith, Catherine Leith, Wilbur F. Sanders, Edmond J. A. Vanaase, Joseph O'Neil, and James Blake. The company is formed to purchase, work, and develop mining properties in Lewis & Clarke and Jefferson counties, and the principal place of business is to be at Helena. The mines of the company are south of Helena, between the Vaughn group and the Gregory.

DEER LODGE COUNTY.

GRANITE MOUNTAIN.—We have been officially advised that the shipments of silver bullion during November were $136,600; total for eleven months, $1,327,400; 69 tons of ore, valued at $22,000, were sent to the smelter during the month, and $100,900 since July.

HOPE.—A plan for the organization of a new company, to be known as the Hope Mining Company, of St. Louis, to which the assets of the Hope Mining Company shall be transferred, is now under consideration. The capital stock is to be $1,000,000, shares $10 each, non-assessable. Stockholders will receive twelve and a half shares of the new company for one share of the old company. The shares in excess of the number required for an exchange will be sold, and the proceeds paid into the treasury of the new company. The mine is in better condition than at any previous time. The new shaft will be finished by March 1st or earlier, and dividends, it is officially stated, will not be far off after a reserve fund of from $30,000 to $50,000 has been provided.

JEFFERSON COUNTY.

MORNING STAR.—This mine, Basin Creek, has been bonded by Hewitt Adams and Charles Starrett, to W. A. Kindred, and work has begun.

LEWIS & CLARKE COUNTY.

The mining camp of Rimini is now connected with Helena by rail through the Helena & Red Mountain Railroad.

CONSOLIDATED TEN MILE MINING AND REDUCTION COMPANY.—It is rumored that operations will be started on a large scale. The mines are located at Red Mountain, and belong to J. J. Hill, C. A. Broadwater, and the Montana Central Railroad Company, and consist of thirty-four well-developed mines on the mountain.

SILVER BOW COUNTY.

BLUE BIRD.—According to the *Inter-Mountain*, James A. Murray and Mr. Patrick A. Largey have entered into an agreement with this company to sell the Little Darling group of mines, situated a short distance west of the Blue Bird mill, and including the Little Darling, Darling, and Lena K. mines. The agreement expires May 1st, 1887, until which time the Blue Bird Company will have exclusive right to develop these mines and extract ore from them. The prices to be paid for the several interests sum up $123,750. Should this not be paid upon the expiration of the time allotted in the agreement, all ores extracted, which are to remain on the dump, will revert to the present owners, Messrs. Murray and Largey. These mines have been sufficiently developed, and are in good shape for capital to handle.

NEBRASKA.

DOUGLAS COUNTY.

OMAHA SMELTING AND REFINING COMPANY.—The company has recently been greatly improving its works and extending their capacity. In the erection of four new blast-furnaces of thirty tons capacity each, it will be able to about double the amount of ore smelting. Four large reverberatory furnaces have been put in, and a new copper-works to use the electrolytic process will enable it to turn out a ton or more of pure copper a day. The capacity of the refinery has also been greatly increased, and the blue-stone department enlarged, as well as the parting establishment for separating gold and silver.

NEVADA.

STOREY COUNTY—COMSTOCK LODE.

The Virginia City *Chronicle* reports the following for the week ended November 27th:

ANDES.—The 350-foot level is the first level to be reopened.

ALPHA.—The old shaft, the broad mineralized quartz belt extending downward from near the surface to below the 900 level, will be thoroughly explored. This belt extends into Exchequer ground. Numerous places were found in this vein on the 900 level that assayed from $5 to $9 a ton, gold predominating.

CHOLLAR.—The old shaft has been retimbered down to the 250 level. The station at that depth is reopened, and a south drift will be sent out to cut the downward extension of the ore development made in the Potosi on the tunnel level.

CONSOLIDATED CALIFORNIA & VIRGINIA.—The official report of the superintendent for the week ended the 27th of November shows that, on the 1300 level, a drift started north from the station in the Consolidated Virginia shaft was advanced 56 feet; total length, 363 feet. This drift has entered good ore, the extent of which can only be determined by further explorations. On the 1435 level, they are continuing the work of cutting out a station, preparatory to sinking a winze to the 1550 level. On the 1500 level, the drift running north from the Consolidated Virginia shaft was advanced 51 feet; total length, 211 feet. On the 1600 level, the drift running south from the north end of the mine was extended 47 feet; total length, 400 feet. On the 1650 level, the drift running southwest from the C. & C. shaft was extended 13 feet; total length, 546 feet. The uprise carried up above

the east cross-cut directly underneath the development on the levels above continues to show a good quality of ore. During the week, 992 tons of ore were shipped to the Morgan mill, and 1807 tons to the Eureka mill. The average value of all the ore milled during this period, according to the assays from the battery samples, was $42.17 a ton, and bullion valued at $101,633.27 was shipped to San Francisco. The shipments from November 1st to December 3d are reported to have amounted to about $444,000. The operating expenses of the mine and cost of bullion production for October and November leaves a balance of cash on hand in the treasury of $139,078.75, provided the expenses of October were not deducted at the time the sworn statement of the financial condition of the company on October 31st was filed.

CROWN POINT & BELCHER.—The combined ore-shipments for the week foot up 2650 tons.

GOULD & CURRY.—On the 425 level, the south drift from the main west drift is penetrating clay mixed with quartz.

HALE & NORCROSS.—Preparations are in progress for reopening the upper levels at several points.

JUSTICE.—Operations are confined to drifting along the vein on the 350 level.

KENTUCK.—Ore-shipments to the Rock Point mill during the week aggregate 430 tons. The average value of the ore is $14 a ton.

OCCIDENTAL.—At a point in the north incline winze, connecting the upper and lower tunnel, 48 feet below the track-floor of the upper tunnel, a south drift was started and is out 14 feet. Eight tons of low-grade ore were extracted during the week. In the lower tunnel in the incline uprise, the north drift is in quartz giving low assays.

OVERMAN.—Ore is extracted from below the 150 level.

POTOSI.—The southeast drift from the tunnel line, 250 feet below the surface croppings, shows 60 feet of ore. Cross-cuts sent in east and west from the line of the lateral drift near the face show a breadth of 25 feet. The drift still shows ore in the face. The northwest drift on the 250 level has connected with the old workings, and shows 95 feet of solid ore high in grade. Assays are said to demonstrate it to contain an average value of $70 a ton. Cross-cuts will be sent in to ascertain the width of this development. A south drift will be sent out immediately from the 100 level in the Chollar shaft, to prospect the downward extension of the vein.

SAVAGE.—The south drift on the 500 level still shows low-grade ore at points where the vein shoves out from the main body. The south drift on the 600 level will connect with the shaft in extending it 78 feet beyond its present length. The advance of the south drift on the 825 is said to demonstrate that the ore development on the 600 extends downward to the levels below.

SIERRA NEVADA.—On the 520 level west cross-cut No. 5, the face continues in quartz and vein matter giving low assays.

YELLOW JACKET.—The daily ore output averages 150 tons, extracted from above the 1300 level.

NEW MEXICO.

GRANT COUNTY.

BALBACH MINING COMPANY.—This company has been organized in St. Louis, to work this mine in the Piños Altos District. Mr. Balbach, who has been connected with the Omaha Smelting-Works, has retained the largest interest in the company; only enough stock has been sold to furnish a working capital. The price was twenty-five cents a share.

BREMEN.—This mine, near Silver City, has been sold to a St. Louis syndicate at a price estimated ta from $400,000 to $750,000. It is said that a company will be organized with a capital stock of $5,000,000. The property embraces 180 acres, and work has been in progress for the last twelve years. The mine has already yielded a large amount of silver. The present depth is 250 feet. The new company will at once begin the sinking of a new double-compartment working-shaft 500 feet in depth.

NORTH CAROLINA.

CABARRUS COUNTY.

HAVILAH.—This is a new mine operated by J. J. Newman. At present, the work consists of sinking on the lode, and the ore thus obtained is sent to the Yadkin Chlorination-Works, at Salisbury.

RANDOLPH COUNTY.

MOHARRIE.—At his mine a twenty-stamp mill is building about 400 yards from the shaft. At present, only ten will be used, and these are in place. The mill is built for the automatic handling of the ore. The ore is in part free milling, and carries a small percentage of sulphurets, which will be concentrated and saved. The present depth of the shaft is 146 feet; it is sinking to a greater depth, and is going down in ore.

PENNSYLVANIA.

CAMERON COUNTY.

The Cameron Iron and Coal Company, of Emporium, received a charter on the 7th inst. The works and mines are in Cameron County. The capital stock is $1,000,000. The principal stockholders are Thomas R. Ellcock, William M. Bunn, James H. Haverin, and Henry H. Bingham, of Philadelphia; George S. Middisbrook, and Frank C. Miller, of New York.

CLARION COUNTY.

Capitalists of Philadelphia are said to be contemplating, in connection with the Fairmount Coal and Iron Company, an adjunct of the Buffalo, New York & Philadelphia Railroad Company, opening a mining and coke plant and a blast and steel furnace at Fairmont, Clarion County, on the low-grade division of the Alleghany Valley Railroad. The total investment in these is estimated at $255,000.

SOUTH AMERICA.

CHILI.

CHIPANA MINING COMPANY.—This company, near Iquiqui, has now on the way from the Pacific Iron-Works, San Francisco, a complete ten-stamp gold mill, with Duncan concentrators. A competent man was also sent down to erect and run this mill.

UTAH.

The receipts of bullion in Salt Lake City, as given by the *Tribune*, excluding all ores, for eleven months of this year, aggregated $4,992,865.

BEAVER COUNTY.

HORN SILVER.—Local papers state that the company is taking out ore and storing it in the drifts, and that shipments are likely to begin before long.

SUMMIT COUNTY.

CRESCENT.—The concentrator has been closed down for the winter season. At the mine, work done is mainly prospecting. About ten tons of first-class ore are taken out daily for shipment.

DALY.—The product for November was 53,186·24 ounces of silver, 35·818 ounces of gold, and $7923 ore sales, making a total of $61,825.51.

ONTARIO.—During November, there were produced 81,997·68 ounces of silver; ore sales, $73,917.11; a total for the month of $155,914.79.

WASHINGTON COUNTY.

STORMONT.—The company averages twenty-eight tons of ore daily. Two hundred feet of double-track tramway are building to take ore from the Last Chance mine.

WISCONSIN.

COLBY.—This mine, situated in Gogebic District, which has shipped some 248,810 tons of ore by lake since May 1st, will ship between 75,000 and 90,000 tons of iron ore by way of the Milwaukee, Lake Shore & Western Railroad to Illinois furnaces before May 1st, 1887. The Colby was discovered three and a half years ago, and was opened two years ago.

LAFAYETTE COUNTY.

The black-jack and dry-bone industry of Southern Wisconsin is assuming enormous proportions. The former is shipped principally to La Salle and Peru, Ill., where it is made into metallic zinc, while the dry-bone has been contracted for by a Mineral Point, Wis., company, to be manufactured into zinc paint. Scores of mines are worked in this county, and hundreds of tons of ore are raised monthly. At Benton, eighty-five tons of dry-bone from the Coltman mine, near the village, were shipped during October, and at Shellsburg the shipments since September 20th aggregate more than two hundred cars.

MARKETS.

NEW YORK, Friday Evening, Dec. 10.

Silver.

DATE.	London. Pence.	N. Y. Cents.	DATE.	London. Pence.	N. Y. Cents.
Dec. 4..	*	98⅝@99	Dec. 8	46¼	100¼
6..	46¼	100¼	9	46¼	100⅜
7..	46⅜	100½	10	46¼	100⅜

*45⅛@45¼.

An advance in Indian Exchange stimulated the silver market, which was checked by the announcement on Wednesday that the Council drawings would be increased next week ten lacs, and the market has receded with a prospect of being lower.

Foreign Bank Statements.—The governors of the Bank of England, at their regular weekly meeting on the 9th inst., made no change in the bank's minimum rate of discount, and it remains at 4 per cent. During the week, the bank gained £98,000 bullion; and the proportion of its reserve to its liabilities was raised from 44⅛ to 45½ per cent, against 45⅞ per cent at the same time last year.

Copper.—There is nothing new in the copper market. Prices are firm at 12c. for Lake and 10¾@11c. for casting brands, and 11½c. for Oxford electrolytic.

The London market continues very low, cables to the Metal Exchange quoting Chili Bars to-day at £39 10s., from which figure it has varied but little during the week.

There is nothing new from Montana. The Anaconda furnaces are said to have shut down for several days for want of coal. The general question asked is, "What was the object in starting up without coal and without miners in the mine? Had speculation on the London market any thing to do with it?" We give up the conundrum.

We hear of a little Lake copper having been sold during the week at 11⅞c., but it was from second hand. None of the producers is willing to accept less than 12c.; and the demand for Lake and other brands is active for the season, and the market in excellent condition in favor of sellers.

A firm in a Southern city asks for the address of a manufacturer where they can have a large quantity of copper tube rods made. They can be addressed through the ENGINEERING AND MINING JOURNAL office.

Tin.—This metal has changed but little in price, either in London or here, since our last report. To-day, London cables to the Metal Exchange were £101 7s. 6d. for spot Straits, and £102 2s. 6d for three months; while here, the price has declined from 22·60@22·65c. for Spot and prompt shipment to 22·45c. for Spot to-day. We quote to-day 22·45@22½c. Sales aggregating fully 250 tons were made during the week at the Metal Exchange.

Lead.—This market is lifeless, and the business has been mostly of a jobbing character, at 4·35c. for Common. There appears to be very light demand, and, while makers are not forcing their production, market consumers are equally unwilling to give their orders.

Messrs. Everett & Post, of Chicago, state:

"A careful survey of the position of pig-lead, as regards production, consumption, and small stocks of pig reported as held by producers, and an almost total absence of speculation, shows that the trade is in a very healthy condition, and that prices are comparatively low."

Nothing of any moment need be looked for in this market for the rest of the month. It looks as if prices would remain about as they are, 4·35@4·40c., in the absence of "bulls" or "bears."

Messrs. John Wahl & Co., of St. Louis, telegraph as follows to-day:

In sympathy with other markets, an increasing dullness has characterized our lead market. Business has been dull during the week, the market closing nominally at 4·07½c. for Common, 4·12½c. for Refined. Sales will not aggregate over 500 tons at these figures.

Messrs. Everett & Post, of Chicago, telegraph as follows to-day:

The market remains about the same, if any thing a shade weaker. Values, nominally 4·12½@4·15c.; some holders ask 4·15c. Demand is only moderate, and but very little doing; offerings are only moderate.

In London, Soft Spanish is quoted £12 15s. Two hundred and ten tons of Richmond lead are expected here by sailing-vessel about December 20th, but will probably go into store.

Manufactures.—Lead Pipe is quoted at 6¼c. and Shot at 7¼c., less the usual 20 per cent discount. Shot is $1.60 for drop and $1.85 per bag, 25 pounds, for Buck and Chilled. Tin-lined Lead Pipe, 15c., less 20 per cent discount.

White Lead.—The combination prices are announced as follows: 7½c. per pound net in quantities of less than 500 pounds, and 7 days, or 2½, 60 per cent discount for cash in 15 days from date of invoice,

For 25-pound, 12½-pound, and 1 to 5-pound assorted cans, an additional charge of 1@1½c. and 2½c. respectively, is made. The rebates are 2 per cent on less than 10 tons purchased during the year, 3 per cent on 10 to 25 tons, and 5 per cent on 25 tons and over. Rebates are payable at the end of the year to buyers who have observed the rules of the Association.

Spelter.—This metal has at last made a movement upward, and we quote 4·40@4·60c., according to brand. It appears that considerable purchases have been made by a speculator, and the price is likely to advance, and the market, perhaps, get a shaking up, though the demand is certainly not urgent. The ground for an advance is in the large consumption going on, and likely to increase for galvanized goods. Some Spelter that has been in store here for three or four years has changed hands during the week.

The London market is cabled £14 7s. 6d. for Silesian.

New Jersey Zinc Oxide, 4@4½c., according to grade.

Antimony.—Hallett's has declined 7c. for prompt shipment. There is no Cookson's here, but 9c. a pound is asked for thirty days. Hallett's is quoted in London to-day by cable to the Metal Exchange at £29 10s.

Nickel.—We quote 60c., with little doing. The German rolled nickel-iron sheets, in which a sheet of iron is rolled between two sheets of nickel, forming perhaps 20 per cent of the whole, has fairly entered our market in a variety of forms; tea-trays and stamped goods of various kinds and of great beauty are imported, and, we are pleased to announce, are now to be stamped from the German sheets at Newark, New Jersey. Mr. William Paulsen, No. 10 Burling Slip, in this city, represents the German patentees.

Bismuth—Is quoted at $2@$2.25 a pound.

Aluminium—Is quoted at 90c.@$1 an ounce.

Quicksilver.—There is no change to note; the market prices continues to rule at 52½c. a pound, and in London at £7 5s.

IRON MARKET REVIEW.

NEW YORK, Friday Evening, Dec. 11.

American Pig.—The expected official announcement of prices by the Thomas Iron Company has been postponed until Monday next; but from information obtained from well-informed and reliable sources, we feel justified in assuming that the prices to be announced will be $20 for No. 1 X and $19 for No. 2 X Foundry. The question has been whether No. 2 X should be put as high as $19. Gray Forge is not quoted, because all that the company can make for some time to come has been bespoken. No doubt, the orders will promptly reach the limit that the company will accept at these figures; indeed, we understand the company has still nearly 30,000 tons of this year's contracts not yet made.

The iron market is extremely strong, and though the announcement of the Lehigh prices will tend to steady the market, and prevent any "booming," yet the inherent strength of the market will probably carry prices a few months hence above those named. There is no probability whatever of any great scarcity of iron, and therefore no room for mischievous excitement, but the market is in a strong and satisfactory condition.

Scotch Pig.—We quote: Coltness, $22@$22.50; Gartsherrie, $21; Summerlee, $21@$22; Dalmellington, $20; Langloan, $20.50; Clyde, $19.50@$20; Glengarnock, $19.50@$20; Eglinton, $19.50. Cables to the Metal Exchange to-day quote: Coltness, 51s. 6d.; Langloan, 48s.; Summerlee, 50s.; Gartsherrie, 47s. 6d.; Glengarnock, 44s. 9d.; Dalmellington, 44s.; Eglinton, 43s. 6d.; Warrants, 43s. 2d.; Middlesboro', No. 3, 32s. 9d. Freights are 7s. 6d.@9s.

The strong condition and active demand for domestic irons has infused somewhat more life into the Scotch pig-iron, and arrivals are promptly taken up, though at only small margins to importers. Prices are somewhat higher, the Glasgow prices having advanced sharply.

Bessemer Pig.—The market is strong. We quote $19@$19.25 at furnace for Domestic, and $20@$20.50 for Foreign. The market is in such a condition that any large orders would probably advance the prices for both Domestic and Foreign.

Spiegeleisen.—The demand continues very strong. We quote $28@$28.50 asked for both English and German 20 per cent Spiegel, but with a practica difference of perhaps 25@50c. a ton more for the English.

Steel Blooms and Billets.—The demand for blooms and billets is very active, and we hear of sales of 15,000 tons of Steel Blooms at $28.50, and we quote $28.75@29.50, the market being evidently looking toward higher prices. Billets $30@$31, according to size and quality. Chateaugay charcoal billets, 3¾ inches, are worth $47@$47.50 at Plattsburg.

Steel Plates.—We quote: Tank, 2·65@2·75c.; Boiler and Ship Plates, 3@3¼c.; Flanges, 3½c.; Extra Flange and Fire-Box Plate, 4¼@4½c.

Steel Rails.—This market continues to rise, and rails are hard to get at quotations. Eastern mills that a few weeks ago quoted $34 and $35, now quote $36 and $37, and higher prices, though not named, are in some cases exacted. We hear of sales of about 15,000 tons—mostly by one of the Western mills, whose reputation is poor—at $37, but most of the Western mills now hold at $38, and even $39. Foreign rails are quoted $40, delivered at Southern ports, duty paid. Cammels is sold up to July, and there is a general disinclination among foreign makers to contract far into the future.

Structural Iron and Steel.—The demand continues remarkably good for this season of the year, with every prospect of an excellent business during the coming year.

We quote: Angles, 2¼@2¼c.; Tees, 2½@2¾c.; Steel Angles, 2·50@2·60c. American Beams and Channels, 3@3½c., base from dock.

Merchant Steel.—We quote: American Tool Steel, 7½@10c.; special qualities, 11@20c.; Crucible Machinery, 4@4·50c.; Bessemer and Open-Hearth Machinery, 2½c., with a large and steady consumption.

Plate Iron.—The demand is good. We quote: Common Tank, 2¼@2¾c.; Refined, 2 30@2½c.; Flange Iron, 3¼@3½c.; Extra Flange, 4@4·25c.

Bar Iron.—We quote: Refined at 1·75@2c.; Common, 1·65@1·75c., with a good demand for the season, and an "advancing" feeling in the market.

Old Rails.—Old rails are extremely scarce, and prices have advanced. We hear of $25.50 having been paid yesterday and asked to-day for Double-Heads. Tees are scarce at $23.50@$24.

Rail Fastenings.—We quote Spikes, 2·25@2·40c. a pound; Angle Fish-Bars, 2c.; Bolts and Nuts, 2·75@3·10c.

Scrap.—We quote $21@$21.50 for Wrought Yard Scrap, with good demand.

Cast-Iron Pipe.—We quote $29 for 36-inch pipe to $35 for 4-inch.

Philadelphia. Dec. 10.

[From our Special Correspondent.]

Pig-Iron.—Considering the high prices prevailing in all kinds of crude iron, and the certainty of a very active demand in a short time, it is rather surprising that so little business is done from day to day. The agents of some large furnace companies in the interior of the State have been among the trade here during the past few days, and report a firm condition of the market for all kinds of iron, but a small demand for immediate delivery.

At no time for years, has there been as much confidence in prices and in a heavy demand as at present. The big companies are holding back to the last moment. The best sales of No. 1 Foundry were made yesterday at $20.50, and amounted, in five transactions that were traced, to 800 tons. As far as the week's foreign sales foot up, the figures are about 2500 tons in all. Almost one half of this was the closing up of business opened some weeks ago. Certain persons made additional purchases with an option, and took advantage of it on the last day. No. 2 Foundry is strong though not active at $18@$18.50 for the better makes. The highest figures in Gray Forge in 100-ton lots are $17.50, and some of the inferior makes that were held at $15.50 now command $16. Sales in a small way for city and near-by mills foot up about 8000 tons. The big winter contracts, it is thought, will not be placed until after the holidays.

Foreign Material.—Brokers who handle most of the foreign material report prices too high to suit buyers' views. Slabs and blooms are out of reach. For all that, a little business has been done. Quotations are $30 for Slabs, and $31 for Nail Plates. Blooms are nominally $28.

Muck-Bars.—Only one sale of Muck-Bars was made t $32 at mill.

Blooms.—Anthracite Blooms are rather hard to get for early delivery.

Manufactured Iron.—The demand for manufactured iron has fallen off, and will not amount to very much until after the holidays. Large buyers are fairly off with material, but are working into their stocks very rapidly, and will want to place orders early next month. The probabilities are, that a great deal of new business will be done on a basis of 1·85c. for Refined, 1·75c. for Medium, and 1·65c. for Common; although figures from one to two tenths higher averaged all around.

Nails.—Nails are firmer than was anticipated, and, at two to two and two tenths, the consumption has been very heavy all through the fall. Were it not for the healthy and united feeling among the makers of nails, there would be a break in the market.

Plate Iron.—Some buyers of plate iron this week report it impossible to place orders at any concessions, no matter how much they might want. Two large manufacturers have secured orders this week for about 600 tons of material. Tank is sold occasionally at as high as 2·50c. Plate iron, 2·25c. or upward, and Shell and Flange at correspondingly even prices. The ship-builders and boat-builders have had their purchasing agents in the market during the past day or two, and it is evident that there will be a good deal of heavy buying done when they get the right figure.

Sheet-Iron.—The sheet-iron mills are not crowded. Card rates are firm. The stocks are moderate. The country trade is very good. Local buyers are well supplied.

Structural Iron.—A leader and manufacturer of structural iron said that as much as 20,000 tons of material would be wanted for various bridge-building enterprises during the next thirty days. By others, this is considered a rather small estimate of the probable business that will be done. Angles are quoted at 2·15@2·25c. Something less can be done, of course, where big business is to be captured. Beams and Channels, 3c.

Steel Rails.—Steel Rails are very firm at $35@$36, and makers are disinclined to enter upon negotiations for large lots at present.

Old Rails.—One broker shows orders or inquiries for no less than 12,000 tons of old rails and old material. The market is of course feverish, as it has been for two weeks. Quotations are $24@$25 on foreign shipments.

Scrap.—No. 1 Scrap in cargo lots could be sold here at $21 or $21.50. There are buyers at these figures. Selected has been sold at $22, and $22.50 has been asked.

Pittsburg. Dec. 9.

[From our Special Correspondent.]

We report a firm and active market. There is still a large demand for the raw material, including all descriptions; in fact, there has been no let-up. Iron is still wanted in large and small amounts for legitimate purposes. Many persons who thought top values had been reached some time since have changed their minds, in order to keep up with the procession. In regard to values, prices have been maintained, while certain descriptions are held at a slight advance. Furnace-men are very firm; some of them inform us that they are busy filling previous transactions, and are not selling at present. Others are still supplying their regular customers; others, who want to buy, experience some difficulty in placing orders for iron to be delivered after the first of the year, as it is generally understood that the railroads will advance the rates of freight; just how much is not known, or even hinted at. An advance in freights will favor city furnaces to a certain extent. One thing is pretty evident, the demand is ahead of the supply. Report says that several new and old furnaces will be blown in early in the new year. The future is full of uncertainties, and it is impossible to predict what may happen if the buying mania continues. We see no reason why it should not. The present transactions are for legitimate purposes, and not for speculation, as on former occasions. Another feature, the advance in raw material was steady in a regular way, 25 cents a ton at a time. This was the best way, much better for both sides than a larger one. In this manner, the present values were reached.

Muck-Bar.—Very firm. We heard of no spot sales. January delivery held $32 cash.

Old Rails.—Iron very scarce; no sales of American. Old kinds of raw iron much fancied.

Pig-Iron.—Following are the current rates :

Coke or bituminous :	$	$		$	$
Foundry No. 1	19.00	@19 50	Muck-Bar	31.50	@31.75
Foundry No. 2	18.00	@18.50	Steel Blooms	32.00	@36.00
Gray F., No. 3	18.00	@18.25	Steel Slabs	30.00	@33.00
" " No. 4	17.00	@17.50	Steel Crop Ends		@23.50
White	16 50	@16.75	St'l Bl'm Ends	23.00	@23.50
Mottled	16.25	@16.50	Old Iron Rails	26.00	@26.50
Silvery	16.50	@19.00	Old Steel Rails	25.50	@26 00
Bessemer	20.00	@20.50	No. 1 W. Scrap	20.00	@20.50
Charcoal :			No. 2 W. Scrap	18.00	@18.50
Foundry No. 1	22.50	@23.50	Steel Rails	36.00	@36.50
Foundry No. 2	22.00	@22.50	" light sect's	37.00	@40.00
Cold-Blast	26.50	@29.00	Bar Iron	1.70	@ 1.80
Warm-Blast	24.00	@25.00	Iron Nails (60 days)	2.10	@ 2.15
20 p. c. Spiegel	30.00	@30.50	Steel Nails	2.15	@ 2.25

Tons.	SALES SINCE LAST REPORT.	
250	Gray Forge, Lake Superior Ore	$18 00 cash.
100	" all Lake Superior Ore	19.50 4 mo.
200	" " " " "	19.00 4 mo.
100	" " " " "	19.25 4 mo.
20	No. 1 Foundry, all Lake Superior Ore	20.00 4 mo.
50	" " " " "	20.25 4 mo.
50	No. 2 " " " "	19.50 4 mo.
1500	imported Bessemer, open hearth	23.00 cash.
1000	Gray Forge, Native Ore	18.00 cash.
500	" " "	18.25 4 mo.
500	imported Steel Billets	32.00 cash.
1000	" Old Iron Rails, double heads	26.50 cash.
600	" Double Heads	26.50 cash.
200	Southern Charcoal Foundry	19.50 cash.

COAL TRADE REVIEW.

NEW YORK, Friday Evening, Dec. 3.

Statistics.

Production Anthracite Coal for week ended December 4th, and year from January 1st :

TONS OF 2240 LBS.	1886.		1885.	
	Week.	Year.	Week.	Year.
P. & Read. RR. Co.	168,842	10,666,891	192,418	10,641,976
L. V. RR. Co.	142,176	5,736,157	149.188	5,695,044
D., L. & W. RR. Co.	101,084	4,707,726	106,299	4,688,111
D. & H. Canal Co.	95,040	3,320,950	110,828	3,110,506
Penna. RR.	52,722	3,128,512	61,614	3,056,185
Penna. Coal Co.	31,326	1,405,445	39,308	1,403,761
Penna. Canal Co.		470,951		425,528
Total	591,190	29,436,632	659,655	29,021,111
Increase		415,521		
Decrease	68,465			

The above table does not include the amount of coal consumed and sold at the mines, which is about six per cent of the whole production.

Production for corresponding period :

1881	26,695,916	1883	30,146,547
1882	27,655,179	1884	29,388,609

Production Bituminous Coal for week ended December 4th, and year from January 1st :

Tons of 2000 pounds, unless otherwise designated.

EASTERN AND NORTHERN SHIPMENTS.	1886.		1885.	
	Week.	Year.	Week.	Year.
Phila. & Erie RR.	16	16,740	84	26,331
**Cumberland, Md.*	56,175	2,346,609	66.651	2,621,259
Barclay, Pa.	2,267	165,833	2,110	214,823
**Broad Top, Pa.*				
H. & Broad Top RR.		345,428	4,183	157,652
East Broad Top				
Clearfield Region, Pa.				
Snow Shoe	2,250	100,318	3,933	138,174
Karthaus (Keating)	4,620	134,837	4,199	125,165
Tyrone & Clearfield	54,859	2,049,287	55,752	2,680,277
Alleghany Region, Pa.				
Gallitzin & Mountain	12,172	624,862	14,723	506,545
Pocahontas Flat Top Coal.				
Norf'k & West. RR.	19,000	799,666	11,000	349,000
Kanawha Region, W. Va.				
Ches. & Ohio RR.		1,115,750		1,000,998
Total	151,359	7,699,330	162,635	8,020,224

* Tons of 2240 lbs.

WESTERN SHIPMENTS.				
Pittsburg Region, Pa.				
West Penn RR.	7,432	295.573	4,148	204,710
SouthwestPenn.RR.	2,629	142.743	1,019	93,249
Pennsylvania RR.	6,212	260,329	4,076	221,260
Westmoreland Region, Pa.				
Pennsylvania RR.	25,649	1,170,010	27,346	1,092,657
Monongahela Region, Pa.				
Pennsylvania RR.	8,737	374,002	5,010	254,953
Total	50,059	2,242,657	41,599	1,866,829
Grand total	201,418	9,941,987	204,234	9,887,053

Production of Coke on line of Pennsylvania RR. for week ended December 4th, and year from January 1st :

Tons of 2000 pounds.

	1886.		1885.	
	Week	Year.	Week.	Year.
Alleghany Region.	4,802	181,253	4,225	172,717
West Penn. RR.	2,322	100,676	2,120	54,148
Southwest Penn.RR	58,688	2,514,506	58,900	1,719,022
Penn. & W. Region	5,785	306,839	6,122	223,067
Monongahela	3,021	134,263	2,951	88,729
Pittsburg Region		108		
Snow-Shoe	400	25,848	433	22,327
Total	75,018	3,263,493	74,751	2,280,010

Anthracite.

The appearance of the coal producer's friend, a blizzard, has greatly benefited the anthracite coal trade. The demand, upon the whole, is taking all the coal produced, while stocks are thought to be unusually small for this time of the year. The cold weather has not been sufficiently prolonged or intense to put stove coal in good shape ; but if the allotment committee will keep the production within proper bounds, there can be no question that this size will be in good demand at full prices soon. There will be a great deal of coal needed by dealers, in this market and in the East, who have been awaiting a collapse of prices, which has been usual at this time of the year for many years past. If the weather should be cold, the producers will control the situation, and a rush for coal at advancing prices will be the result. The demand from the West is far beyond the facilities of transportation offered. It is thought that these demands are sufficiently urgent to advance prices in that quarter, and permit the coal companies to pay the railroads such rates of freight as will cause them to make efforts to furnish the necessary facilities for carrying the coal. This would ease the supplies at this end and greatly benefit the market.

The general sales-agents will meet again next week. No change in prices is thought probable.

We quote ordinary free-burning coals, net., f.o.b. vessels, as follows :

	Week ended Dec. 10.	Dec. 3.	Nov. 26.
Lump	$3.40	$3.40	$3 40
Steamboat	3.40	3.40	3.40
Broken	3.30	3.30	3.30
Egg	3.60	3.65	3.65
Stove	3.85@ 4.10	3.90@ 4.10	3.80@ 4.10
Chestnut	3.50	3.50	3.35
Pea	2.25	2.10@ 2.25	2.10
Buckwheat	1.70	1.60	1.50
Dust	1.25	1.20	1.20

Chestnut coal has become so scarce that it is difficult to purchase it at net prices. Stove coal is in much greater quantity than any other size. The stock is still embarrassing to the trade. A considerable quantity of this size, of undoubted quality, has been sold during the week at $3.75 a ton. We do not learn of any more offered at the same price. The better classes of free-burning pea coal are very scarce, and full prices are obtainable for them. Lehigh Pea, however, is obtainable at $1.50 a ton, and even less has probably been taken for round lots. Broken size is a little heavy.

On last Saturday, the Reading Company had 33,602 tons of coal in stock at Port Richmond, an increase of 4681 tons for the week.

Bituminous.

There is still a great scarcity of this class of coal and of cars. The demand on contracts is very urgent. For good coals, from $3.30 to $3.50 a ton is easily obtainable. On Monday, there will be an important meeting of all of the producers of bituminous coal that ship their products to the seaboard. It is though that the combination that has been forming may be completed at that meeting. The question for settlement is said to be the percentages that the several interests shall produce. The meetings, so far, are said to have been harmonious, and it is stated that the feeling is unanimous in favor of the formation of the combination.

Buffalo. Dec. 9.

[From our Special Correspondent.]

"Ma, what is this coal pool I read about in the papers?" asked little Johnny. "I'm sure I don't know," was the reply, "unless it is where miners go in swimming."

I feel like Johnny.

This will be a short communication ; but as I can not make something from nothing, and you were fully posted on the past season's business last week, your readers will have a rest.

Prices of coal are unchanged ; demand good. The scarcity of cars continues, but not to so great an extent as was last mentioned. Coke is steady.

The last few days of the season of navigation were so very cold and stormy that many reports of disasters have been received, accompanied by further loss of life and vessels, including in the latter four or five coal cargoes. Several craft loaded with coal sought shelter in various ports, where they will lay up until next spring, retaining their cargoes or else disposing of them.

The Canadian Government Geological Survey Department reports that investigation made in the Saskatchewan region shows that the hard and soft coal supply in the large country lying between the Rocky Mountains House and Fort Pitt is practically inexhaustible.

Boston. Dec. 8.

[From our Special Correspondent.]

The colder weather has not yet effected an improved tone in this market, and there must be a good pull of it first. The prevailing dullness is owing in part to the fact that only the Boston retail trade remains with a partial winter stock on hand. The dealers at Lynn, Newburyport, Haverhill, and points farther east, as well as along the South Shore, have laid in their winter stock in anticipation of a speedy closing of tide-water streams. The tendency is, however, to stock up less and less in anticipation of winter at this port.

As the market looks easier, and is easier than at our last report, the vote of the companies not to advance circular prices is regarded as rather amusing. Plenty of Stove coal can be had at $3.90@$4 f.o.b. at New York. Egg size is easier, and has been offered at $3.70, or 10 cents off circular. Broken is only fairly firm, but Nut and Pea are as firm as ever.

The advance in bituminous has checked what little trade there was. No one will pay $2.30, which is the one f.o.b. price at all ports ; but that price is held to. An offer of sale at $2.20 was reported, but it does not come from any company directly, and it is but fair to say that no one is breaking the pool price. The pool by the way, is said to have great powers to call for persons and papers in case of suspected treachery, and it makes the f.o.b. price of $2.30 to hold on all coal sold up to March 1st. It looks as if a sharp corner were turned on Cumberland companies by their keen competitors in making the price $2.30 without distinction as to shipping port. It is foolish to think that any sharp practice, if it be really such, will be submitted to ; for the pool only holds by unanimous consent, and the square thing must be done. The report that the Boston & Lowell bought for two years, and will not be in the market this season, is not entitled to credence. The officials of the road are reticent about it. In answer to our inquiry, President Morey said : "If the public is inclined to think that I was shrewd enough to buy for two years, I guess I won't say any thing."

Freights are stiffening up somewhat.

We quote vessel rates, exclusive of discharging, as follows :

New York, 80@90c. ; Philadelphia, $1@$1.10 ; Baltimore, $1.10@$1.15 ; Newport News and Norfolk, $1.05@$1.10 ; Richmond, $1.10@$1.15 ; Cape Breton, $1.85@$2 ; Bay of Fundy, $1.60.

Retail trade is in a better condition. We quote delivered prices as follows :

White ash, furnace and egg	$5.00@$5.25
" stove and nut	5.25@ 5.50
Lehigh furnace, egg and stove	5.50@ 5.75
" nut	5.50@ 6.00
Shamokin egg	5.50@ 6.00
" stove	5.75@ 6.00
Lorberry egg and stove	@ 6.50
Franklin egg and stove	@ 7 00

Pittsburg. Dec. 9.

[From our Special Correspondent.]

The market is not very active. The late run resulted in considerable loss to many of the owners, and the sinking of one steamer at No. 2, and damage to others. The sudden and severe cold made ice so fast that navigation was first impeded and then suspended altogether. A number of tow-boats failed to reach port ; they will remain along shore until navigation is resumed. Additional shipment for Cincinnati, 312,000 bushels ; Louisville, 168,000 bushels. Prices further declined in Cincinnati. Second pool, 6½c. ; fourth pool, 5½c. The amount of coal in the Southern and Western markets is considered sufficient to last until next April.

Prices here : Wholesale, f.o.b., 4@4¾c. per bushel ; Railroad, 4½@5c. per bushel.

Connellsville Coke.—The market is steady. Prices for the current month have been fixed ; in fact, there has been no change in values for some time. What will be done on the arrival of 1887 will be another matter. Dealers still complain of a scarcity of cars, some of the iron furnaces being obliged to "bank up" for the want of cars. It is to be hoped that this will be remedied in the near future. The rates are : Blast-Furnace, $1.50 f.o.b. cars at works ; Foundry, $1.75 ; Crushed, $2.25. The demand for an advance was refused. The manufacturers are a unit on that subject.

New Orleans.

On the 2d inst., Mr. Oscar Schnidan assumed charge as general agent of the entire Pittsburg coal business in New Orleans. He represents a coal pool styled the Pittsburg and Southern Coal Company, composed of all the coal shippers to the Southern markets from the Monongahela Valley. Capt. J. F. Walton, of Walton & Co., of Pittsburg, is the president of the pool, and is expected here in a few days. The effect of the pool on the coal trade of this section was thus stated by A. K. Brown, of the firm of C. A. Miltenberger & Co., the

oldest coal house in this city: "The merchants, planters, and others who use a great deal of coal are the parties who will suffer by the formation of such a pool. The object of the organization is solely for the purpose of reducing the expenses from several agencies to one general agency. The arrangement will not, so far as I know, make any material difference in the Pittsburg coal trade of New Orleans, as the company is to have as nearly as possible a uniform wholesale price. The retail business is entirely in the hands of the dealers, who purchase through me, as I am only authorized to sell at wholesale." There has already been an advance in the retail price of coal from 45 to 50 cents a barrel. The wholesale price has not been changed.

FINANCIAL.

Mining Stocks.

NEW YORK, Friday Evening, Dec. 10.

The week under review opened with a continuation of the great "boom" of the previous week, which, however, had not the strength to sustain itself, and weakened from day to day. The collapse, for such it may be called, was attributed to the numerous failures of brokers and other gamblers in San Francisco.

The transactions, which were large and brisk for several days, gradually dwindled down, and the excitement at the Exchange, in consequence, abated. It is possible that this reaction is only temporary, and that, when the bears have had their feast, the bulls may again take their turn. Just now, the bears are "on top." Pity it is, that a great industry should be injured by such gambling in worthless stocks.

Sutro Tunnel again attracted great attention, and was more extensively dealt in than any other stock on the list. The opening price on Saturday was 49 cents; on Tuesday, it reached its highest point, 63 cents. This was probably due to a report that the stock was selling in San Francisco for $1. The price since has declined to 30 cents. There is evidently a movement for higher prices, and it would not be surprising should this stock yet reach $1. The sales were again very large, amounting to 466,500 shares. Notwithstanding the reports of large bullion shipments, improvement in the grade of the ore, dividends, etc., Consolidated California & Virginia has taken a downward plunge from $65, at which price it was selling on Tuesday, to $25 to-day. The price has, as we predicted several weeks ago, declined more rapidly than it advanced. It is evident, however, that, if a dividend is declared by the company, the stock will take another spurt, and bring again higher prices. The other Comstock shares, which advanced only on the point that they were situated near the Consolidated California & Virginia, were not greatly affected by the rapid decline of the latter. Best & Belcher opened at $20, advanced to $24 on Wednesday, and declined to $21 on the same day, selling to-day at $7.75. Hale & Norcross was firm at from $7.50@$8.75; the last sale made was $8.50. Sierra Nevada, which opened on Saturday at $11.75, advanced that day to $14, but during the week declined to $5.50. Yellow Jacket had but one sale on Saturday, at $11, and one to-day at $5.50. Potosi, one at $12. Chollar, one at $7.50. Bullion, one at $5. Crown Point, one on Tuesday of $12. Union Consolidated declined from $8 to $4. But little has been done in Eureka at $6 and $7. North Belle Isle was firm at $6.75 and $7.50. Belle Isle, from 90@75c. Navajo, on Monday, was quoted at $2, and declined to $1.35 on Tuesday, advancing the following day to $1.80, and closing to-day at 80c.

A downward movement ruled in Oriental & Miller, which went from 28@ 15c. The State Line "cats" continue to play, Nos. 1 and 4 at from 5@10c., closing at 5c.; and Nos. 2 and 3 at from 10@5c., closing at 5c. The existence of this stock is only on paper. The companies were reorganized long ago into one company, known as the State Line Mining Company.

Quicksilver Preferred and Common, which only showed in the boom the latter part of last week, received considerable attention this week; Preferred ruling from $26.63@$28.25; and Common, at from $8.50@$7.75. Taylor-Plumas, which is said to show good reports, ruled steady between 35@50c., closing at 40c. Green Mountain advanced from 45@66c. Gold Stripe stood at from 6@10c., closing at 6c.

There has also been a declining tendency in Colorado stocks, Colorado Central being one of the exceptions; it has held its own at from $2.95@$3.10. Silver Cliff has been the card played this week; it took a sudden jump on Saturday from 18@60c.; and since then, the price has ranged between 51 and 20c., closing to-day at 40c. This rapid advance is due solely to manipulation, the Silver Cliff Mining Company having ceased to exist some time ago. The total transactions recorded amount to 73,500 shares. Reports of a dividend are hanging over Leadville; but notwithstanding this, the price declined from 73@65c. Little Chief, from 40@30c. Chrysolite, from 90@85c. Little Pittsburg was higher, at from 70@90c., closing at 90c. Lacrosse again shows large sales at from 26@13c. Red Elephant varied from 10@6c.; this company's property exists also only on paper, it having been sold by the sheriff in September last. Harlem, which is also a questionable stock, has been brought to light at 9@6c.; and Durango, which came out on Saturday at 3c., quickly advanced to 15c., and has since declined to 5c. One sale of Freeland is reported at $1; and one of Iron Silver at $2.80. Amie's ghost contributed largely to the week's amusement, the transactions amounting to 107,800 shares at declining prices from 8@3c. New Pittsburg showes a sale at 48c. Robinson Consolidated has been firm at from 54@50c.

Standard Consolidated is reported to be in a good condition, and has advanced to $2; a month ago, it was but 75c. Bodie declined from $4.25@$2.90. Bulwer was firm, with small transactions at from $1.95@$2.05. Consolidated Pacific sold at 50c. Mono ranged between $3.80 and $5, closing at $3.10.

Considerable activity was displayed in Homestake, which opened at $17.25, declined to $15, and on Thursday advanced again to $18, closing to-day at $16. Deadwood-Terra shows but one sale at $2.90; and Father de Smet one at 95c. Caledonia was active at from $1.25@$1.50. Iron Hill, which was quoted in Deadwood a week ago between 50 and 60c., shows sales here on Thursday between 95 and 89c.

Castle Creek, which on Monday stood at 30c., has declined to 17c.; it is said that this stock will soon advance, probably only for a short time, in order to give insiders an opportunity to sell out at a profit. The date of this advance is given as somewhere near the 15th.

The stock of the Helena Mining and Reduction Company (a reorganization of the old Alta-Montana Company), in which but little business has been doing, shows this week sales of 4000 shares at from $1.85@$1.60.

Horn-Silver has been firm at from $1.75@$2.05, showing sales amounting to 1275 shares; it is said that the company has found some good ore, but nothing definite can be learned. Ontario declined from $23@$21.50; and Stormont, from 23c.@15c. Generally, the mines that possess actual value have declined, and the "cats" have advanced.

Good reports are received from Rappahannock, which shows large transactions, ranging from 26@16c., closing at 18c. to-day; the sales were 77,000 shares.

Dahlonega was also brought from its resting-place on Saturday, and dealt out at from 7@2c., closing to-day at 2c., some 43,300 shares changing hands.

The total transactions for the week amounted to 1,173,749 shares, showing an increase of 28,566 shares, as compared with the preceding week.

Coal Stocks.

There has been considerable nervousness to the market this week. The main cause for this has been a tightness of money and fears of greater scarcity. At the same time, the banks are discriminating against fancies, which has caused many of them to decline considerably, carrying good stocks with them. The best authorities think that money will work close, but do not see any cause for serious alarm from this course. Money is coming from abroad all the time, and the low rates of exchange will continue this movement for a time at least. Small holders of securities are not as confident as they were, while the leading spirits in the market are still looking for much higher prices, regardless of any decline that may come now.

The coal stocks have been much more of a feature in the general market this week than for some time past. As we predicted would be the case, the return of Mr. S. V. White has ushered in an upward movement in Delaware, Lackawanna & Western stock. It is expected that it will sell at 150 ex the January dividend, which will be declared the last day of this month. If it does, of course Delaware & Hudson is likely to act in sympathy with it.

Insiders in Reading say that that stock will sell at 60 or higher soon. This is apparently not so much based on its merit as the powers of a strong pool behind the stock. The reorganization plan appears to be about ready to present to the public.

New York, Susquehanna & Western has had a marked rise. Still higher prices are thought to be not improbable, especially if some matters under consideration are carried out as expected. The preferred stock is said to be the best purchase.

The Norfolk & Western securities have advanced considerably on the announcement that that road would control the East Tennessee, Virginia & Georgia. It is also stated that the Richmond Terminal party has been a large purchaser of the former stock.

The Tennessee Coal and Iron Company's stock has advanced still more.

It is stated that there has been some good inside buying of Hocking Valley stock on weak spots for some time past, and that a further upward movement in that stock may be looked for at any time.

Meetings.

The annual and special meetings of the following companies will be held at the times mentioned:

American Coal Company, No. 1 Broadway, New York City, December 30th, from twelve o'clock M. to one o'clock P.M.

Dividends.

Franklin Mining Company, of Michigan, has declared a dividend of one dollar a share, or $40,000, payable January 1st, to stockholders of record on the 18th inst.

Honorine Mining Company, of Utah, has declared dividend No. 7, of five cents a share, or $12,500, payable on the 15th inst., at No. 113 Devonshire street, Room 8, Boston, Mass.

Richmond Consolidated Mining Company, Limited, of Nevada, has declared a dividend of 5 shillings ($1.25) a share, free of income tax, or $67,500, payable on the 6th inst., at the Union Bank, Prince's street, E.C., London, England.

Silver King Mining Company, of Arizona, has declared dividend No. 62, of twenty-five cents a share, or $25,000, payable December 15th, at San Francisco.

ASSESSMENTS.

COMPANY.	No.	When levied.	Delinquent in office.	Day of sale.	Amount.
Acme, Cal	9	Oct. 25	Nov. 29	Dec. 20	.02½
Aultman, Cal	3	Oct. 26	Nov. 29	Dec. 20	.02½
Caledonia, Nev	...	Nov. 26	.....	.....	.15
Chollar, Nev	22	Nov. 16	Dec. 21	Jan. 13	.50
Columbus Cons., Nev	4	Oct. 27	Nov. 29	Dec. 20	.50
Comstock & Belfast, Dak	2	Nov. 8	Dec. 9	Dec. 26	¾
Darboy, Dak	2	Nov. 1	Dec. 1	Dec. 15	.01
Diana, Nev	6	Oct. 12	Nov. 22	Dec. 13	.25
Eureka, Dak	6	Sept. 27	Nov. 13	Dec. 14	.02½
Exchequer, Nev	23	Oct. 18	Nov. 24	Dec. 15	.20
Golden Fleece, Cal	7	Nov. 22	Dec. 27	Jan. 15	.10
Gorilla, Cal	4	Nov. 26	Dec. 31	Jan. 21	.06
Hailey Hill	...	Nov. 24	Dec 29	Jan. 17	.01
Independence, Nev	16	Oct. 12	Nov. 16	Dec. 8	.20
John Duncan, Mich	....	Nov. 24	Dec. 24	Dec. 24	.25
Maryland & Charlotte	...	Nov. 29	Feb. 1	Feb. 1	.05
May Flower, Cal	33	Nov. 17	Dec. 22	Jan. 17	.25
Mountain Tunnel, Cal	2	Oct. 27	Nov. 29	Dec. 20	.10
National, Dak	2	Nov. 1	Dec. 1	Dec. 15	.1-5
Peer, Ariz	6	Nov. 16	Dec. 22	Jan. 17	.10
Peerless, Ariz	9	Nov. 16	Dec. 23	Jan. 17	.20
Pilot Peak, Cal	14	Oct. 11	Nov. 22	Dec 27	.01
Pocahontas, Dak	2	Sept. 27	*Dec. 1	*Dec 27	.01
Polar Star, New Mex	1	Nov. 17	Dec. 31	Jan. 15	.07
Potosi, Nev	26	Nov. 10	Dec. 14	Jan. 4	.30
Ruby Bell, Dak	1	Nov. 4	Dec. 15	Dec. 31	¼
Santa Anita, Cal	10	Oct. 26	Nov. 29	Dec. 20	.01½
Scorpion, Nev	20	Nov. 12	Dec. 17	Jan. 7	.10
Sierra Iron, Cal	5	Nov. 11	Dec. 29	Jan. 25	2.50
South Fork, Cal	4	Nov. 1	Dec. 1	Jan. 1	1.00
Spring Valley, Cal	1	Oct. 19	Dec. 3	Jan. 3	.25
Summit, Cal	9	Nov. 29	Dec. 29	Jan. 18	.10
Tallulah, Nev	21	Oct. 30	Dec. 8	Dec. 29	.30
Tiewaukie, Utah	....	Oct. 8	Nov. 26	Dec. 13	.25
Tuscarora Tun'l, Nev	....	Nov. 4	Dec. 15	Jan. 10	7.50
Tyrolese, Idaho	...	Oct. 23	Nov. 30	Dec. 28	.15
Union Cons., Nev	34	Nov. 3	Dec. 7	Dec 28	.25
Utah, Nev	54	Nov. 20	Dec. 24	Jan. 19	.50
West Galena, Dak	5	June 5	*Nov30	*Dec20	⅛

* The delinquent day and the day of sale were postponed to dates given above.

Pipe Line Certificates.

The following table gives the quotations and sales at the Consolidated Stock and Petroleum Exchange:

	Opening.	Highest.	Lowest.	Closing.	Sales.
Dec. 4.	81⅝c.	81⅝c.	80⅜c.	81⅛c.	2,927,000
6.	80½	80⅞	80	80¼	2,548,000
7.	80	80	72	73	9,813,000
8.	73	73	67	69⅞	9,561,000
9.	70	70	66	68⅜	6,922,000
10.	68½	70	67⅜	68¼	3,540,000
Total sales in barrels (40 gallons)					35,311,000

DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares.		Assessments.			Dividends.			
				No.	Par value	Total levied to date.	Date and amount per share of last.		Total paid to date.	Date and amount per share of last.		
1	Adams, s. L.	Colo.	$1,500,000	150,000	$10	*			$525,000	Nov.	1886	.15
2	Alice, s. C.	Mont	10,000,000	400,000	25	*			750,000	Sept	1886	.06¼
3	Amie Con., s. L.	Colo.	5,000,000	500,000	10	*			830,000	Oct.	1883	.05
4	Amy & Silversmith, s.	Mon.		341,419					17C,710	Nov	1886	.10
5	Atlantic, C.	Mich	1,000,000	40,000	25	$280,000	Apl. 1875	$1.00	320,000	Jan.	1886	$1.00
6	Argenta, s	Nev..	10,000,000	100,000	100	295,000	July 1885	.10	40,000	Feb.	1880	.20
7	Barbee & Walker, s.	Utah	1,000,000	100,000	10	*			60,000	Nov	1880	.10
8	Bassick, G. s.	Colo.	10,000,000	100,000	100	*			400,000	Mar.	1884	1.00
9	Belle Isle, s.	Nev..	10,000,000	100,000	100	140,000	May 1886	.10	300,000	Dec.	1879	.25
10	Belcher, G. s.	Nev..	10,400,000	104,000	100	2,217,335	ec. 1885	.30	15,397,000	Apl.	1876	1.00
11	Bellevue Idaho, s. L.	Idah.	1,250,000	125,000	10	26,250	Dec. 1883	10	150,000	Nov.	1846	.10
12	Big B'nd Hydraulic, G	Dak..	1,000,000	200,000	5	*			204,000	Nov.	1886	.03
13	Black Bear, G.	Cal..	3,000,000	30,000	100	22,500	Dec. 1884	.25	895,000	May	1883	.20
14	Bodie Con., G. s.	Cal..	10,000,000	100,000	100	324,990	Jun. 1886	.50	1,602,572	Apl.	1885	.50
15	Bonanza Developm't C&M		3,000,000	300,000	10				135,000	Oct.	1882	.15
16	Bonanza K'g, Cons. s.	Cal..	1,000,000	100,000	10	*			185,000	Feb.	1885	.10
17	Boston & Mont, G.	Mont	2,500,000	250,000	10	*			520,000	Jun	1886	.15
18	Breece, s.	Colo.	5,000,000	200,000	25	*			2,000	Feb.	1880	.01
19	Brooklyn Lead, L. s	Utah	500,000	50,000	10				102,000	Sept	1886	.05
20	Bulwer, G.	Cal	1,000,000	100,000	100	40,000	Oct. 1885	.20	175,000	Jan.	1884	.10
21	Caledonia, G.	Dak.	10,000,000	100,000	100	505,000	May 1885	.15	40,000	Feb.	1886	.10
22	Calumet & Hecla, C	Mich	2,500,000	100,000	25	1,200,000			28,350,000	Nov.	1886	5.00
23	Carbonate Hill, s. L.	Colo.	2,000,000	200,000	10	*			80,000	Apl.	1884	.05
24	Caribou Con., s.	Colo.	1,500,000	150,000	10	*			50,000	Mch	1880	.10
25	Castle Creek, G.	Idah.	100,000	100,000	1				51,000	Oct.	1883	.03
26	Catalpa, s. L	Colo.	3,000,000	300,000	10	*			270,000	May.	1884	.10
27	Central, C.	Mich	500,000	20,000	25	100,000	Sept 1861	.06	1,780,000	Jan.	1886	2.00
28	Christy, s.	Utah	10,000,000	100,000	100				10,000	Jun.	1885	.10
29	Chrysolite, s. L.	Colo.	10,000,000	200,000	50	*			1,650,000	Dec.	1884	.25
30	Colorado Central, s. L	Colo.	2,750,000	275,000	10	*			171,250	Dec.	1886	.10
31	Cons. Cal. & Va., G. s.	Nev..	21,600,000	216,000	100	108,000	Jan. 1885	.20	64,800	Feb.	1886	.30
32	Con. Gold Mining, G.	Ga...	500,000	100,000	5	*			108,000	Nov.	1883	.02
33	Contention, s	Ariz.	12,500,000	250,000	50				42,587,000	Dec.	1884	.25
34	Crescent, s. L. G.	Utah	15,000,000	600,000	25	‡			210,000	Aug.	1886	.05
35	Crown Point, G. s.	Nev..	10,000,000	100,000	100	2,675,000	Feb. 1882	.25	11,588,000	Jan.	1875	2.00
36	Deadwood-Terra, G.	Dak..	5,000,000	200,000	25	*			1900,000	Jan.	1881	.10
37	Derbec B. Grav., G. s.	Cal..	10,000,000	100,000	100	90,000	Dec. 1881	.10	140,000	Jun.	1886	.10
38	Dunkin, s. L.	Colo.	5,000,000	200,000	25	*			220,000	Sept	1884	.05
39	Elkhorn, G. s.	Mont	1,000,000	100,000	10	50,000	July 1883	.50	145,000	Nov.	1886	.50
40	Eureka Con., G. s. L.	Nev..	5,000,000	50,000	100	500,000	July 1886	1.00	4,817,500	July	1882	.25
41	Evening Star, s. L.	Colo.	500,000	50,000	10	*			1,400,000	Nov	1883	.50
42	Excelsior, G.	Cal..	10,000,000	100,000	100	560,000	Sept 1885	1.00	875,000	Oct.	1880	.25
43	Father de Smet, G.	Dak..	10,000,000	100 000	100	200,000	Nov. 1878	1.00	1,125,000	Dec.	1885	.20
44	Franklin, C.	Mich	1,000,000	40,000	25	220,000	Jun. 1871		560,000	Dec.	1886	1.00
45	Freeland, G. s. C.	Colo.	5,000,000	200,000	25	*			190,000	July	1886	.10
46	Fresno Enterprise, G	Cal..	5,000,000	100,000	50		Mch 1883	.10	110,000	July	1882	.10
47	Gould & Curry, G. s.	Nev..	10,800,000	108,000	100	4,055,000	Sept 1886	.50	3,826,000	Oct.	1870	10.00
48	Grand Central, s.	Ariz.	1,000,000	100,000	10				625,000	Dec.	1882	.25
49	Grand Prize, s.	Nev..	10,000,000	100,000	100	570,000	Apl. 1886	.50	495,000	Mar.	1884	.25
50	Granite, s.	Colo.	1,250,000	125,000	1				6,250	May	1883	.01
51	Granite Mountain, s.	Mont	10,000,000	400,000	25				1,600,000	Nov.	1886	.25
52	Green Mountain, G. s.	Cal..	1,250,000	125,000	10	*			212,000	Nov.	1881	.07½
53	Hale & Norcross, G. s	Nev..	11,200,000	112,000	100	4,974,800	Oct. 1886	.40	1,598,000	Apl.	1871	5.00
54	Hall-Anderson, G.	N. S.	150,000	150,000	1				7,000	Jan.	1882	.05
55	Hecla Con., s. G. L. C.	Mont	1,500,000	30,000	50				1,032,000	July	1846	.50
56	Hel'a Mg & Red, G. s. L	Mont	3,315,000	663,000	5	*			197,970	July	1886	.06
57	Holmes, s.	Nev..	10,000,000	100,000	100	300,000	Sept 1885	10	75,000	Apl.	1886	.25
58	Holyoke, G.	Idah.	200,000	200,000	1				27,000	Feb.	1883	.10
59	Homestake, G.	Dak.	12,500,000	125,000	100	200,000	July 1878	1.00	3,668,750	Dec.	1886	.40
60	Honorine, s. L.	Utah	500,000	250,000	2	25,000	Jun. 1883		87,500	Dec.	1886	.05
61	Hope, s.	Mont	400,000	8,000	50	*			158,252	Oct.	1884	1.50
62	Horn-Silver, s. L.	Utah	10,000,000	400,000	25	*			4,000,000	Nov.	1884	.50
63	Idaho, G.	Cal..	310,000	3,100	100				3,750,000	Jun.	1886	7.50
64	Ideal, s. L	Colo.	1,500,000	150,000	10				15,000	Oct.	1886	.05
6	Independence, s.	Nev..	10,000,000	100,000	100	340,000	Oct. 1886	.20	225,000	Sept	1879	.25
66	Indian Queen, s.	Nev..	250,000	125,000	2				368,750	July	1883	.03
67	Invo, G.	Cal..	500,000	100,000	5	*			45,000	Apl.	1882	.05
68	Iron Hill, s.	Dak.	2,500,000	250,000	0	82,500	Oct. 1885		112,500	Oct.	1886	.05
69	Iron-Silver, s. L	Colo.	10,000,000	500,000	50	*			1,800,000	Dec.	1886	.20
70	Jackson, G. s.	Nev.	5,000,000	50,000	100	10,000	Nov. 1880	.20	45,000	Oct.	1883	.10
71	Jocuistita, s.	Mex.	2,500,000	250,000	10				1,200,000	Feb.	1845	.50
72	Kentuck	Nev.	3,000,000	30,000	100	342,000	Nov 1881	.30	1,600,000	Nov.	1886	.10
73	La Plata, s. L.	Colo	2,000,000	200,000	10	*			610,000	Sept	1882	.30
74	Leadville Cons., s. L.	Colo.	4,000,000	400,000	10	*			410,000	Oct.	1886	.05
75	Lexington, G. s.	Mont	4,000,000	40,000	100	*			565,000	Jan.	1885	2.00
76	Little Chief, s. L.	Colo.	10,000,000	200,000	50	*			780,000	Mch	1885	.10
77	Little Pittsburg, s. L	Colo.	20,000,000	200,000	100	*			1,050,000	Mch.	1880	.50
78	Manhattan, s.	Nev.	5,000,000	50,000	100	150,000	July 1879	1.00	437,500	Feb	1888	.25
79	Marguerite, G.	Cal..	500,000	25,000	20				18,750	Oct.	1882	.25
80	Marion Bullion, G	N.C	500,000						15,000	Jan	1886	
81	Martin White, s.	Nev..	10,000,000	100,000	100	1,150,000	Mar. 1886	.25	115,000	Oct.	1886	.25
82	Minnesota, C.	Mich	1,000,000	40,000	25	420,000	Apl. 1883	1 00	1,825,000	Mar.	1879	
83	Mono, G.	Colo.	5,000,000	50,000	100	560,000	Jun. 1885	.50	12,500	Mar	1886	.25
84	Montana, Lt., G. s.	Mont	3,300,000	330,000	10	*			795,000	Oct.	1886	.62
85	Morning Star, s. L.	Colo.	1,000,000	100,000	10	*			650,000	Oct.	1886	.25
86	Moulton, s. G.	Mont	2,000,000	400,000	5	*			290,000	Aug	1886	.07½
87	Mount Pleasant, G.	Cal.	150,000	150,000	1	*			105,000	Mar.	1884	.10
88	Mt. Diablo, s.	Nev.	5,000,000	50,000	100	137,500	Jun. 1880	2.00	80,000	July	1885	.20
89	Napa, Q	Cal..	700,000	100,000	7				290,000	Jan	1885	.10
90	Navajo, G. s.	Nev..	10,000,000	100,000	100	395,000	Mar. 1886	25	325,000	Feb.	1885	.25
91	N. Hoover Hill, G. s.	N. C.	300,000	120,000	2½	*			30,000	Dec.	1885	.06⅓
92	New York Hill, G.	Cal..	5,000,000	50,000	100	62,500	Oct 1885	.15	215,000	Aug.	1882	.10
93	Northern Belle, s.	Nev..	5,000,000	50,000	100	425,000	Jan. 1884	8.00	2,400,000	Apl.	1883	50
94	North Belle Isle, s.	Nev..	10,000,000	100,000	100	150,000	Mar 1886	.20	30,000	Aug.	1881	.15
95	Ontario, s. L.	Utah	15,000,000	150,000	100				7,850,000	Nov.	1886	.50
96	Ophir, G. s.	Nev..	10,000,000	100,000	100	3,957,800	Jun. 1886	.25	1,595,000	July	1882	1.00
97	Original, s. C.	Mont	1,500,000	60,000	25	*			114,000	Oct.	1884	.05
98	Osceola, C.	Mich	1,250,000	50,000	25	480,000	Apl. 1876	1.60	972,500	Sept.	1884	.25
99	Oxford, G.	N. S	125,000	125,000	1	*			34,500	Oct.	1885	.02
100	Paradise Valley, G. s	Nev.	10,000,000	100,000	100	47,000	Mar. 1882	.15	140,000	Nov.	1886	.10
101	Peacock, s. G. C.	N.M.	2,000,000	200,000	10	*			60,000	Nov.	1886	
102	Pleasant Valley, G. s.	Cal..	10,000,000	100,000	100	40,000	Mar. 1884	.10	30,000	Dec.	1882	.05
103	Plutus, G. s. C. L.	Colo.	2,000,000	200,000	10	*			20,000	Feb.	1886	.10
104	Plymouth Con., G.	Cal..	5,000,000	100,000	50	*			1,825,000	Dec.	1885	.25
105	Prussian, s. L.	Colo.	1,500,000	150,000	10				132,000	Jan	1883	.10
106	Quicksilver, pref., Q	Cal..	4,300,000	43,000	100				785,150	Aug.	1886	1.25
107	" com., Q	Cal..	5,700,000	57,000	100				151,000	July	1882	.40
108	Quincy, C.	Mich	1,000,000	40,000	25	200,000	Dec. 1882		4,410,000	July	1886	2.00
109	Richmond, s. L.	Nev..	1,350,000	54,000	25	*			4,245,087	Dec.	1886	1.25
110	Ridge, C.	Mich.	500,000	20,000	25	220,000	Mar 1886	.50	100,000	Feb.	1880	.50
111	Rising Sun, s.	Dak..	750,000	150,000	5	*			52,000	May	1881	.07½
112	Robinson Con., s. L.	Colo.	10,000,000	200,000	50	*			585,009	Mar.	1886	.05
113	Robert E. Lee, s. L.	Colo	10,000,000	500,000	20				100,000	Dec.	1882	.10
114	Rooks, G.	Vt.	500,000	50,000	10	*			61,000	Apr	1885	.30
115	San Francisco, C.	Cal..	5,000,000	50,000	100	45,000	Sept 1880	.50	20,000	Feb.	1883	.05
116	Savage, s.	Nev..	11,200,000	112,000	100	6,156,000	Jun. 1886	.50	4,460,000	July	1869	3.00
117	Security L. Mg., Mfg.	Colo.	1,000,000	100,000	10	*			50,000	July	1884	
118	Shoshone, G.	Idah.	150,000	150,000	1				7,000	Apl.	1883	.01
119	Sierra Buttes, G.	Cal..	225,000	22,500	10				1,438,964	Oct.	1886	.37
120	Sierra Grande, s.	N. M.	2,500,000	500,000	5				860,000	Sept	1884	.25
121	Sierra Nevada, G. s.	Nev..	10,000,000	100,000	100	5,972,698	Sept	1886	102,000	Jan.	1871	1.00
122	Silver Cord, G. s. L.	Colo.	5,000,000	500,000	10				225,000	Nov.	1883	.25
123	Silver King, s.	Ariz.	10,000,000	100,000	100				1,775,000	Dec.	1886	.25
124	Silverton, G. s. L.	Colo.	2,000,000	200,000	10	*			76,000	Nov	1886	.02
125	Small Hopes Cons., s.	Colo.	5,000,000	250,000	20	*			2,412,500	Nov.	1886	.20
126	Smuggler, s. L.	Colo.	600,000	60,000	10				66,700	Aug.	1883	.25
127	Socorro, C.	N. M.	250.000	2,500	100				4,000	Mch	1882	.00¾
128	South Yuba, G.	Cal..	2,000,000	0,000	50	*			150,000	Oct.	1881	.75
129	Spring Valley, G.	Cal..	200,000	200 000	1	50,000	Oct. 1886	.25	50,000	Jan.	1881	.25
130	Standard, G. s.	Cal..	10 000,000	100,000	100	25,000	Oct. 1884	.25	4,425,000	Mar.	1884	.25
131	Stormont, s.	Utah	500,000	500,000	1	*			155,000	Nov.	1881	.05
132	St. Joseph, L.	Mo..	1,500,000	150,000	10	*			694,000	July	1886	.60
133	Syndicate, G.	Cal..	10,000,000	100,000	100	38,729	July 1882	.15	48,308	Sept	1885	.10
134	Tip Top, s.	Ariz.	10,000,000	100,000	100	250,000	Sept 1883	.25	100,000	Nov.	1881	.20
135	Tombstone, G. s. L.	Ariz	12,500,000	500,000	25	*			1,250,000	Apl.	1882	.10
136	True Fissure, G. s. L.	Utah	1,500,000	150,000	10	*			75,000	Jun.	1883	.15
137	United Verde, C.	Ariz.	3,000,000	300,000	10	*			97,500	Feb.	1884	.20
138	Valencia, M.	N. H.	150,000	1,500	100	*			41,250	Apl	1886	2.50
139	Vizina, s.	Ariz.	5,000,000	200,000	25	*			140,000	Apl.	1882	.10
140	Yankee Girl	Colo.	2,500,000	250,000	10				1,062,500	Oct.	1886	.10
141	Yellow Jacket, G. s.	Nev..	12,000,000	12,000	100	5,448,000	Dec. 1885	.75	2,184,000	Aug.	1871	1.50

NON-DIVIDEND-PAYING MINES.

	Name and Location of Company.		Capital Stock.	Shares.		Assessments.			
				No.	Par Value	Total levied to date.	Date and amount per share of last		
1	Agassiz Cons., s. L.	Colo.	$2,500,000	50,000	$50	*			
2	Albion, s. L.	Nev..	15,000,000	150,000	100	$577,000	July	1883	.50
3	Allouez, C.	Mich	2,000,000	80,000	25	240,000	Feb.	1884	.50
4	Alpha Con., G. s.	Nev..	3,000,000	30,000	100	430,000	Mar	1886	.50
5	Alta, s.	Nev.	10,080,000	100,800	100	1,976,600	Oct.	1886	.25
6	American Flag, s.	Colo	1,250,000	125,000	10	300,000	Jun.	1877	.25
7	Anglo-Montana, Lt.	Mon.	600,000	120,000	5				
8	Appalachian, Lt., G.	N. C.	1,500,000	300,000	5				
9	Aspen Mg. & S., s. L	Colo.	2,000,000	200,000	10				
10	Barcelona, G.	Nev..	5,000,000	200,000	25	*			
11	Battle Creek, G.	Dak.	5,000,000	200,000	25				
12	Bear Creek	Cal..	300,000	300,000	1				
13	Bechtel Con., G.	Cal..	10,000,000	100,000	100	173,500	Jan.	1883	.10
14	Belmont, s.	Nev..	5,000,000	50,000	100	735,000	Apl.	1886	.10
15	Best & Belcher, G. s.	Nev.	10,080,000	100,800	100	1,748,590	Sept	1886	.50
16	Big Pittsburg, s. L.	Colo.	20,000,000	200,000	100	*			
17	Bi-Metallic, s.	Mon.	5,000,000	200,000	25	*			
18	Black Jack, G.	Cal..	250,000	100,000	2½	*			
19	Bonanza Chief	Mon	1,000,000	1,000,000	1	*			
20	Bondholder	Colo	500,000	200,000	2½				
21	Boston Con., G.	Cal..	10,000,000	100,000	100	170,000	Nov	1883	.25
22	Bradshaw, s.	Ariz.	2,250,000	225,000	10	*			
23	Buckeye Common	Colo.	2,000,000	400,000	5	*			
24	Bull-Domingo, s. L.	Colo.	10,000,000	200,000	50	*			
25	Bullion, G. s.	Nev..	10,000,000	100,000	100	4,800,000	Aug.	1885	.30
26	Bve and Bye	Ariz.	1,000,000	100,000	10	*			
27	Calaveras, G.	Cal..	500,000	500,000	1	*			
28	Catskill, s.	Nev..	1,500,000	30,000	5				
29	Cen Contin'l, G. s. L.	C. & A	2,000,000	200,000	10	*			
30	Charles Dickens.	Idah.	1,250,000	250,000	5				
31	Cherokee, G.	Cal..	1,500,000	150,000	10				
32	Chollar, s.	Nev..	11,200,000	112,000	100	1,096,000	Nov	1886	.50
33	Cinnamon Mt., G. s.	Colo.	750,000	150,000	5				
34	Climax, s. L.	Colo.	2,000,000	200,000	10	*			
35	Colorado No. 2, s. L	Colo.	100,000	10,000	10				
36	Con. Imperial, G. s.	Nev..	50,000,000	500,000	100	1,100,000	Aug.	1886	.10
37	Con. Pacific, G.	Cal..	6,000,000	60,000	100	174,000	Feb.	1886	.15
38	Cons Silver, s.	Mo..	2,500,000	250,000	10				
39	**Cop. Queen Cons, C.	Ariz	1,400 000	140,000	10				
40	Courtlandt	Colo	500,000	50,000	10				
41	Crescent, s. L.	Colo.	3,000,000	300,000	10	*			
42	Crocker, s.	Ariz.	10,000,000	100,000	100	65,000	May	1886	.20
43	Crowell, G.	N. C	500,000	500,000	1	*			
44	Dahlonega, G.	Ga..	250,000	250,000	1	*			
45	Dandy, s.	Colo.	5,000,000	500,000	10				
46	Dardanelles, G.	Cal..	1,000,000	100,000	10	*			
47	Decatur, s.	Colo.	1,500,000	300,000	5	*			
48	Denver City, s. L.	Colo.	5,000,000	500,000	10	*			
49	Denver Gold	Colo.	300,000	60,000	5				
50	Deseret, G. s.	Utah	500,000	50,000	10	*			
51	Dunderberg, s.	Colo	1,500,000	150,000	10	*			
52	Durango, G.	Colo.	500,000	500,000	1	*			
53	Durango T.	Mex	120,000	1,200	100				
54	Eastern Dev. Co., Lt.	N. S.	1,500,000	150,000	10	990,800	Mar.	1886	1.00
55	Empire Lt., G.	Mon.	1 500,000	150,000	5				
56	Empire, s., G.	Utah	10,000,000	100,000	100	*			
57	Enterprise, s. L.	Colo.	800,000	80,000	10	*			
58	Eureka Tunnel, s. L	Nev..	10,000,000	100,000	100	*			
59	Exchequer	Nev.	10,000,000	100,000	100	860,000	Oct.	1886	.20
60	Garfield, Lt., G. s.	Nev.	500,000	100,000	5	*			
61	Gold Placer, G.	Colo.	5,000,000	200,000	25	*			
62	Goodshaw, G.	Cal..	10,000,000	100,000	100	229,314	Dec.	1885	.25
63	Grand Belt, C	Tex.	12,000,000	120,000	100	*			
64	Grand Duke	Colo.	800,000	80,000	10				
65	Gregory-Bobtail, G.	Colo.	550,000	550,000	1	*			
66	Gregory Con., G.	Mon.	3,000,000	300,000	10	*			
67	Harlem M. & M. Co, G.	Cal..	1,000,000	200,000	5				
68	Head Cent. & Tr. s. G	Ariz.	10,000,000	100,000	100				
69	Hidalgo, s.	Mex.	200,000	20,000	10				
70	Highland, C	Mich	500,000	25,000	25				
71	Hortense, s.	Colo.	2,000,000	200,000	10				
72	Iron Gold & Silver, s	N. M.	2,000,000	200,000	10				
73	Iroquois, C	Mich	1,250,000	50,000	25				
74	J. D. Reymert	Ariz.	10,000,000	100,000	100	*			
75	Julia Cons., G. s.	Nev..	11,000,000	110,000	100	1,438,000	Nov	1886	.10
76	Kearsarge, C.	Mich	1 250,000	50,000	25	100,000	Apl.	1886	5.00
77	Laclede	N. M.	2,000,000	200,000	10				
78	Lacrosse, G.	Colo.	1 000 000	100,000	10	*			
79	Lee Basin, s. L.	Colo.	5,000,000	500,000	10	*			
80	Leviathan, s.	Nev..	10,000,000	100,000	100	380,000	Sept	1886	.25
81	Lucerne, s.	Colo.	5,000,000	500,000	10	*	Jan	1886	.10
82	Mammoth Bar., G.	Cal..	10,000,000	100,000	100	50,000	Dec	1881	
83	Mariposa pref., G.	Cal..	5,000,000	50,000	100	1,687,500	Feb	1883	.25
84	" common, G.	Cal..	10,000,000	100,000	100	1,975,000	Dec	1881	.20
85	May Belle, G.	Cal..	10,000,000	100,000	100	84,000	Mar	1884	.15
86	Mayflower Gravel.	Cal..	1,000,000	100,000	100	110,000	Nov	1886	.25
87	Mexican, G. s	Nev..	10,000,000	100,800	100	2,565,760	Jun.	1886	.25
88	Mike & Starr, s. L.	Colo.	1,000,000	200,000	5	*			
89	Miner Boy, G. s. L.	Colo.	5,000,000	500,000	10	*			
90	Miller	Nev	5,000,000	200,000	25	*			
91	Moose Silver, s.	Colo.	3,000,000	300,000	10	*			
92	Nachoochee, Lt., G.	Ga..	1,000,000	200,000	5	*			
93	New Pittsburg, s. L	Colo.	2,000,000	200,000	10	*			
94	North Standard, G.	Cal..	10,000,000	100,000	100	20,000	Nov		
95	Noonday	Cal..	600,000	60,000	10	208,000	Dec.	1881	.10
96	Old Dominion, C.	Ariz.	3,000,000	300,000	10	*			
97	Oriental	Nev..	2,000,000	200,000	10	*			
98	Oriental & Miller, s.	Nev..	10,000,000	400,000	25	*			
99	Overman, G. s.	Nev..	11,520,000	115,200	100	3,702,320	July	1886	.15
100	Parrott, G.	Mon.	1,800,000	180,000	10	*			
101	Park, s.	Utah	2,000,000	200,000	10	*			
102	Peer, s.	Ariz.	10,000,000	100,000	100	135,000	Nov.	1886	.10
103	Peerless, s.	Ariz.	10,000,000	100,000	100	295,000	Nov.	1886	.20
104	Potosi.	Nev..	11,200,000	112,000	100	1,112,000	Nov.	1886	.30
105	Puritan, s. G.	Colo.	1,500,000	150,000	10	*			
106	Quincy	Colo.	3,000,000	300,000	10				
107	Rappahannock, G. s.	Va..	250,000	250,000	1	*			
108	Red Elephant, s.	Colo.	500,000	500,000	1	*			
109	Rollins, G. s.	Colo.	5,000,000	200,000	25	*			
110	Ropes, G. s.	Mich	2,000,000	80,000	25	63,200	Mar	1886	.10
111	S.P. & Canon del A. C.	N.M.	10,000,000	400,000	25	*			
112	Sheridan	N.M.	2,000,000	200,000	10				
113	Silver Cliff, s.	Colo.	5,000,000	400,000	12½				
114	Sonora Con.	Mex.	5,000,000	200,000	25	*			
115	South Bulwer, G.	Cal..	10,000,000	100,000	100	100,000	May	1881	.25
116	South Hite	Cal..	10,000,000	100,000	100	195,000	Jan.	1883	.05
117	South Pacific	Cal..	500,000	100,000	5				
118	State Line, s.	Nev..	250,000	250,000	1	*			
119	St. Louis & Mex., s.	Mex.	5,000,000	500,000	10	*			
120	St. Louis & St. Elmo	Colo.	2,000,000	200,000	10				
121	St. L & St. Felipe, G. s.	Mex.	1,500,000	150,000	10				
122	St. L. & Sonora, G. s.	Mex.	1,500,000	150,000	10				
123	St. Louis & Yavapai	Ariz.	3,000,000	300,000	10				
124	Sunday Lake, I.	Mich	1,250,000	50,000	25				
125	Sullivan, G. s. L.	Me..	500,000	100,000	5	125,000	Dec.	1882	.25
126	Sutro Tunnel

NEW YORK MINING STOCK QUOTATIONS.

DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	Dec. 4.		Dec. 6.		Dec. 7.		Dec. 8.		Dec. 9.		Dec. 10.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Alice, Mon	1.50	.....	1.45	.....	1.75	1.50	.....	.....	.....	.....	1 60	.....	1,600
Amie Con., Co	.08	.04	.07	.04	.07	.05	.06	.05	.05	.03	.05	.04	107,800
Argents, Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bassick, Co	.27	.26	.35	.30	.33	.30	.....	.....	.31	.29	.....	.....	2,600
Belle Isle, Ne	.90	.80	.90	.75	.80	.....	.75	.....	.....	.....	.....	.....	1,120
Bodie Cons., Ca	4.25	3.90	4.00	3 95	4.25	4.15	4.20	4.10	3.55	3.50	2.90	.....	3,875
Breece	.60	.....	60	.58	.60	.50	.....	.....	.....	.....	.....	.....	2,400
Bulwer, Ca	2.05	1.95	2.00	...	.....	.....	.....	.....	.....	.....	.....	.....	900
Caledonia	.....	.....	1.25	.....	1.25	.....	.....	.....	.....	.....	1.50	1 40	2,800
Challar	7.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Chrysolite, Co	.....	.....	.90	.85	.85	.....	.85	.....	.....	.....	.....	.....	900
Colorado Central	3.10	2.95	3.25	3.10	3.20	3.15	3.10	.....	.....	.....	3.1	3.00	4,150
Cons. Cal. & Va., Ne	50.00	42.25	56.00	51.00	65.00	50.00	50.00	.....	.....	.....	25.00	.....	1,177
Crown Point	.....	.....	.....	.....	12.00	.....	.....	.....	.....	.....	.....	.....	1,000
Deadwood	.....	.....	2.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Dunkin	.....	.....	.45	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Eureka Cons., Ne	7.00	6.00	.....	.....	.....	.....	.....	.....	7.00	.....	.....	.....	260
Father de Smet, Dk	.95	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Freeland	.....	.....	.....	.....	.....	.....	.....	.....	1.00	.....	.....	.....	100
Gold Stripe, Ca	.07	.06	.10	.09	.....	.....	.07	.....	.07	.....	.07	.06	13,600
Gould & Curry, Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Green Mountain, Ca	.50	.45	.55	.50	.60	.....	65	.....	.66	.....	.....	.....	1,700
Hale & Norcross, Ne	8.50	7.50	8.75	.....	.....	.....	8.50	.....	.....	.....	.....	.....	750
Hibernia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Homestake, Dk	.....	.....	17.25	15.75	15 00	.....	16 50	15.00	18.00	15.50	16.00	.....	1,080
Horn-Silver, Ut	1.85	1.75	2.00	.....	2.00	1.90	.....	.....	2.05	2.00	.....	.....	1,275
Independence	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Iron Hill	.....	.....	.....	.....	.....	.....	.....	.....	.95	.89	.....	.....	1,000
Iron Silver, Co	.....	.....	.....	.....	.....	.....	.....	.....	2.80	.....	.....	.....	300
Leadville C., Co	.73	.71	.71	.69	.70	.....	.69	.66	.67	.65	.....	.....	3,700
Little Chief, Co	.40	.37	.40	.38	.38	.37	.35	.....	.....	.....	.32	.30	6,200
Little Pittsburg, Co	.85	.75	.82	.77	.75	.....	.70	.....	.90	50	.90	.85	6,725
Martin White, Ne	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Navajo, Ne	1.75	.....	2 00	.....	1.35	.....	1.80	1.40	1.50	1.40	.90	.80	1,500
North Belle Isle, Ne	.....	.....	6.75	...	7.50	.....	.....	.....	.....	.....	.....	.....	300
Ontario, Ut	23.00	.....	.....	.....	.....	.....	.....	.....	21.50	.....	.....	.....	200
Ophir	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Plymouth	16.75	16 63	.....	.....	16.88	16.50	.....	.....	.....	.....	17.00	.....	710
Prussian	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Quicksilver Pref., Ca	27.50	27.00	27.50	27.00	27.00	.....	27.50	26 63	28.50	28 25	28.00	.....	3,200
" Com., Ca	8.00	7.75	8.50	8.00	8.00	.....	8.25	7 75	8.00	.....	.....	.....	1,600
Quincy	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Robinson Cons., Co	.54	51	.52	.51	.55	.52	.....	.....	.50	.....	.....	.....	3,900
Savage, Ne	.....	.....	17 50	.....	20.00	19 00	.....	.....	.....	.....	.....	.....	600
Sierra Nevada, Ne	14 00	11.75	13 88	.....	13.50	.....	12.50	.....	5.50	.....	.....	.....	915
Silver King, Ar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Spring Valley, Ca	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Standard, Ca	1.90	.....	2.00	1.90	1.95	1.90	1.90	.....	.....	.....	.....	.....	900
Stormont, Ut	.23	.21	.22	.20	.21	.....	.19	.15	.....	.....	.....	.....	4,800
Tip Top, Ar	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Yellow Jacket	11.00	.....	.....	.....	.....	.....	.....	.....	5 50	.....	.....	.....	100

NON-DIVIDEND-PAYING MINES.

NAME AND LOCATION OF COMPANY.	Dec 4.		Dec. 6.		Dec. 7.		Dec. 8.		Dec. 9.		Dec. 10.		SALES.
	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Alta	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
American Flag	.21	.18	.23	.20	.24	.20	.....	.....	.....	.....	.....	.....	20,000
Barcelona, G	.28	.20	.....	.....	.....	.....	.....	.....	.....	.....	.13	.12	6,900
Bechtel Con., G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belvidere	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Belcher	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Best & B'licher, G. S	21.50	20.00	.....	.....	.....	.....	.....	.....	.....	.....	7.75	.....	590
Big Pittsburg, S. L	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bullion	5.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Bradshaw	.....	.....	.16	.05	.....	.....	.....	.....	.....	.....	.....	.....	4,700
Bull-Domingo, S.L	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Castle Creek	.22	.20	.30	.22	.....	.....	.....	.....	.....	.....	.20	.....	4,100
Central Ariz'na, S	.44	.35	.50	35	.32	.....	.....	.....	.....	.....	.20	.....	9,800
Cons. Imperial	2.00	1.90	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	300
Con. Pacific	.50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Dahlonega	.07	.02	.06	.02	.03	.02	.03	.....	.....	.....	.04	.03	43,300
Decatur	.....	.....	.02	.....	.03	.02	.02	.....	.....	.....	.03	.02	.02	.01	24,300
Durango, G	.15	.03	.11	.07	.09	.04	.07	.06	.07	.05	.06	.....	76,600
Eastern Oregon	.06	.04	.04	.....	.....	.....	.....	.....	.....	.....	.02	.....	.....	.....	7,300
Gold Placer, G	08	.03	.05	.03	.04	.03	.03	.....	.....	.....	.03	.....	.....	.....	28,200
Harlem M. & M. Co	.09	.07	.08	.....	.08	.....	.07	.06	.07	.....	.....	.....	7,600
Helena	.....	.....	1 85	1.80	1.80	.....	.....	.....	.....	.....	1 85	1.75	1.70	1.60	4,000
Kossuth	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lacrosse, G	.22	.17	.26	.20	.25	.20	.20	.....	.....	.....	.17	.13	.17	.....	41,000
Mariposa Pref., G	...	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
" Com., G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mexican, G. S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	12.00	11 38	.....	.....	700
Mono	4.10	3.80	4 15	3.85	5.00	4.50	4.10	3.90	4.15	3.10	.....	.....	3,500
Navajo, 2 and 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Pittsburg	.....	.....	.....	.....	.48	.....	.....	.....	.....	.....	.....	.....	200
North Standard, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
N. Horn-Silv'r, S L	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Ori'nt'l & Miller, S	28	.22	.24	.20	.20	.....	.20	.19	.18	.....	.15	.....	5,300
Potosi	12.00	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	200
Rappahannock, G	.26	.20	.24	.23	.23	.16	.19	.16	.20	.13	.19	.17	77,000
Red Elephant, S	.10	.09	.10	.09	.08	.06	.....	.....	.08	.....	.....	.....	5,900
" 2 and 3	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Silver Cliff, S	60	.18	.51	.24	.45	.29	.35	.25	.34	.20	.40	.33	73,500
Sonora Con	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Bodie, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Bulwer, G	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Hite	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Pacific	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
State Line, 1 & 4, S	.09	.07	.10	.05	.08	.07	.07	.....	.05	.04	.05	.....	37,500
" Nos. 2 & 3, S	.08	.07	10	.08	.09	.08	.07	.05	.05	.03	05	.....	34,700
Sutro Tunnel	.49	.42	.51	46	.63	.30	.50	.36	.39	.35	.36	.30	466,500
Taylor Plumas	.48	47	.50	.35	.45	.....	.45	.....	.40	.....	.....	.....	3,200
Tioga	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	400
Unadilla, S	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Union Cons., G. S	.....	.....	.....	.....	.....	.....	.....	.....	8.00	.....	4 00	.....	4 25	4.00	620
Utah	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

BOSTON MINING STOCK QUOTATIONS.

	Dec. 3.		Dec. 4.		Dec. 6.		Dec. 7.		Dec. 8.		Dec. 9.		SALES.
Amie	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Allouez	.....	.....	2.50	.....	.....	.....	.....	.....	2.50	.....	2.25	2.00	1,100
Atlantic	.....	.....	.....	.....	.....	.....	.....	.....	12.00	.....	.....	.....	20
Belle Isle	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bodie	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Bonanza D	2.12	2.00	2.06	2.00	.....	.....	2.12	2.00	2.12	2.06	2.25	2.17	6,100
Boston & Montana	.....	.....	8.00	7.50	8.00	.....	.....	.....	6.00	.....	.....	.....	1,050
Breece	.6	.....	.63	.6	.62½	.....	.....	.....	.....	.....	.50	.....	1,200
Bulwer	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Calumet & Hecla	.....	.....	220	.....	.....	.....	.....	.....	218	217	216	.....	31
Catalpa	.40	.35	.47½	.44	.47½	.45	.42½	.....	.....	.....	.....	.....	5,140
Central	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	20.00	.....	5
Con. Virginia	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dunkin	.41	.40	.....	.....	.42½	.....	.46	.40	.40	.....	.....	.....	850
Eureka	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Franklin	17.00	16.87	17.00	16.75	17.00	16.75	16.50	.....	16.87	16.75	16.50	.....	988
Freeland	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Grand Prize	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Honorine	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kearsage	.....	.....	.....	.....	.....	.....	9.00	8.00	.....	.....	9.25	9 00	300
Ontario	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Osceola	26.50	.....	27.00	26.00	27.00	.....	27.75	27.50	.....	.....	27.37	27.25	294
Quincy	59 00	.....	.....	.....	59.00	.....	58.75	.....	59.00	.....	59.00	58.75	324
Robinson	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Security	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	3.12	.....	100
Standard	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stormont	.20	.....	.20	.....	.....	.....	.....	.....	.....	.....	.....	.....	800

	Dec. 3.	Dec. 4.	Dec. 6.	Dec. 7.	Dec. 8.	Dec. 9.	SALES.
Arnold	.....	.....	.72½	.....	.75	.....	700
Aztec	.....	.....	.....	.....	.....	.....	.....
Blue Ridge	.20	.20	.20	.25	.25	.25	3,400
Bowman Silver	.08	.08	.....	.07½	.08	.....	5,000
Cedar Spring	.....	.....	.....	.....	.....	.....	.....
Con. Pacific	.60	.....	.....	.....	.....	.....	200
Copper Falls	.....	.....	.....	.....	.....	.....	.....
Crescent	.16	.....	.20	.17½	.....	.17½	2,600
"Cusi"	.....	.....	.....	.45	.....	.....	200
Empire	.....	.....	.....	.....	.....	.....	.....
Hanover	.....	.....	.....	.....	.....	.....	.....
Humboldt	.30	.....	.....	.....	.39	.....	200
Huron	3.00	2.75	3.25	3.00	3.50	3.25	3.37	3.25	.....	.....	3.50	.....	3,550
Mascot	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Mesnard	.....	.....	.....	.....	.....	.....	.55	.50	.....	.....	.....	.....	300
Minnesota	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
National	.....	.....	.....	.....	.....	.....	1.50	.....	1 50	.....	.....	.....	400
Native	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Napa	1.00	.....	1.00	.....	.....	.....	1.00	.....	.....	.....	.....	.....	875
Ora	.....	.....	.....	.98½	.....	.98¼	.....	.....	.....	.....	.....	.....	300
Oriental & Miller	.32½	.30	.32	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,500
Pewabic	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Star	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sutro Tunnel	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.50	.48	300
Tamarack	.93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.93	.....	31
Washington	.....	.....	.....	.....	.....	.....	.12	.....	.....	.....	.....	.....	100
Winthrop	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

New York: Dividend shares sold, 185,537. Non-dividend shares sold, 988,210. Total New York, 1,173,747.
Boston: Dividend shares sold, 18,302. Non-dividend shares sold, 20,656. Total Boston, 38,958.

COAL STOCKS.

NAME OF COMPANY.	Par value of shares.	Dec. 4.		Dec. 6.		Dec. 7.		Dec. 8.		Dec. 9.		Dec. 10.		Sales.
		H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	H.	L.	
Barclay Coal	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Cameron Coal	50	26⅝	25¾	30⅞	27	32	31⅛	32⅝	32	33	32⅛	33	32¼	18,227
Col., C. & I	10	41¼	40½	41¼	40	40	38⅜	39½	39	39⅞	39⅛	39⅛	38¼	17,065
Ches. & O. RR	100	9⅝	.....	9⅞	9¾	10¼	.....	.....	.....	9¾	9½	9⅜	.....	450
Consol. Coal	100	.....	.....	.....	.....	.....	.....	.....	.....	28	.....	.....	.....	100
Cumb. C. & I	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Del. & H. C	100	106½	106	106¾	105⅛	105⅛	104⅝	104⅞	104⅝	106⅛	105¼	105⅝	104⅛	10,540
D., L. & W. RR	50	144	143¼	143⅛	142½	142¾	141	142⅝	141¼	143¾	142¼	143½	141⅝	183,790
Elk Lick Coal Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lehigh C. & N.†	50	.....	.....	50¾	.....	50¾	.....	50½	50¼	50¾	50⅛	.....	.....	1,564
Lehigh Valley RR.†	50	.....	.....	56⅞	56¾	56¾	.....	57	56⅞	57	56⅞	.....	.....	453
L. & W. C. & I. Co	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Maryland Coal	100	.....	17¾	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	100
Montauk Coal	100	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Morris & Essex	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
New Central Coal	100	.....	.....	18	.....	17	.....	.....	.....	.....	.....	18	.....	350
N. J. C. RR	100	54	53¼	54	52⅝	53¼	51¾	52¾	52	53	51¼	52¼	51	66,943
N. Y. & S. Coal	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. Coal	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Penn. RR.†	50	.....	.....	58½	58¼	58⅛	57⅛	57¾	57½	57⅞	57⅛	.....	.....	4,542
Ph. & R. RR.*	50	50	49	50	48⅝	48¾	47⅛	48⅝	46½	49½	48⅛	49⅞	47⅝	573,104
Spring Mountain	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tennessee C. & I. Co	.....	115	113½	117	116	117	.....	118	116	116½	115	116	110	6,500
Westmoreland Coal†	50	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

* Of the sales of this stock, 33,434 were in Philadelphia, and 539,670 in New York.
† The quotations for these stocks are not percentage, but actual price.

Total sales, 883,728.

San Francisco Mining Stock Quotations.

NAME OF COMPANY.	CLOSING QUOTATIONS. Dec. 3.	Dec. 4.	Dec. 6.	Dec. 7.	Dec. 8.	Dec. 9.
Albion	.....	.....	.....	.....	.....	.....
Alpha	.....	.....	.....	.....	.....	.....
Alta	4.50	4.12½	5.25	5.75	3.00	2.87½
Argenta	.....	.....	.....	.....	.....	.....
Bechtel	.....	.....	.....	.....	.....	.....
Belcher	.....	.....	.....	.....	.....	.....
Belle Isle	.....	.....	.....	.....	.....	.....
Best & Belcher	20.00	24.00	.....	23 00	18.50	12.25
Bodie	4.00	4.12½	.....	4.50	3.50	3.00
Bulwer	1.87½	1.62½	.....	2.12½	1.87½	2.00
Challar	6.50	8.25	.....	8.75	6.75	5.00
Con. Cal. & Va	39.00	55 00	64.00	52.00	40 00	32.00
Con. Pacific	.50	.54	.....	.65	.55	.50
Crown Point	6.00	7 00	9.25	10.00	5.00	5.00
Eureka Cons	9 00	9.00	.....	8.50	7.00	7.75
Gould & Curry	9.25	13.25	.....	10.00	7.37½	6.75
Grand Prize	.....	.....	.....	.....	.....	.....
Hale & Norcross	7.37½	8.50	10.25	9.00	5.12½	5.00
Martin White	.....	.....	.....	.....	.....	.....
Mexican	11.00	13.75	.....	13.25	7.75	6.25
Mono	4.00	4.00	6.25	4.00	4.25	3.7
Mount Diablo	.....	.....	.....	3.00	3.12½	.....
Navajo	1.87½	1.50	.....	1.75	1.62½	.8
Northern Belle	.....	.....	.....	.....	.....	.....
North Belle Isle	.....	.....	.....	.....	.....	.....
Ophir	26.50	34.50	.....	22.00	19.75	1
Potosi	10⅞	14.25	.....	15.25	8.62½	7
Savage	17.00	18.50	.....	21.00	13.25	8
Scorpion	.....	.....	.....	.....	.....	.....
Sierra Nevada	11.75	16.00	16.00	16.00	7.75	
Sutro Tunnel	.....	.....	1.00	.....	.....	.,
Tip-Top	.....	.....	.....	.....	.....	re
Union Cons	8.87½	10.00	12.50	9.00	5.00	
Utah	8.00	9.75	.....	9.75	9.00	
Yellow Jacket	9.75	14.50	.....	17.00	7.75	

St. Louis Mining Stocks. Dec. 8.

[From our Special Correspondent.]

The market for the dividend-paying properties has been very steady this week, with, if any thing, an upward tendency, while the so-called "fancies" have fluctuated wildly and are weak. Sheridan, which has been traded in most extensively, declined at one time to $2.15 a share; but to-day, under "reported" favor-

able news, advanced again and closed at $3.10. All other "cheap" stocks have sympathized in a degree with Sheridan, and sales were only effected at declining figures. If these declines will cause investors to be more cautious and to more thoroughly examine proposed new schemes before putting their money in them, the future benefits will be much greater than the present apparently rather heavy losses.

NAME OF COMPANY.	Location.	Bid.	Asked.
Adams, s. l.	Colo.	$6.00	$6.25
Bi-Metallic, s.	Mont.	.....	.....
Cen. Continental, g. s.	Ark.	.....	.....
Consolidated Silver, s.	Mo.	.....	.....
Courtland	Colo.	.....	.25
Dandy, s.	Colo.	.....	.....
Durango, t.	Mex.	.....	.....
Grand Duke	Colo.	.....	.....
Granite Mountain, s.	Mont.	50.00	51.00
Hope, s	Mont.	47.00	50.00
Ideal, s. l.	Colo.	1.20	1.25
Iron Gold and Silver	N. Mex.	.....	.55
Laclede	N. Mex.	.35	.50
Peacock	N. Mex.	2.50	2.75
Puritan	Colo.	.....	.25
Quincy	Colo.	.10	.12½
Sheridan	N. M.	3.10	3.25
Small Hopes Cons., s. l.	Colo.	8.50	9.00
St. Louis & Mex. Imp.	Mex	1.90	1.95
St. Louis & San Fran.	Mex.	.....	.....
St. Louis & Sonora, g. s.	Mex.	.....	.20
St. Louis & St. Elmo	Colo.	.....	.40
St. Louis & Yavapai	Ariz.	.80	.95
West Granite, s	Mont.	.....	1.60

Boston Copper and Silver Stocks.

[From our Special Correspondent.]

BOSTON, Dec. 9.

The market the past week has been rather a quiet one in the copper stocks, with prices fairly steady, although a little inclined in some specialties to a lower basis. We do not look for a great deal of activity during the present month, but believe in much higher prices in the near future. Calumet & Hecla has been heavy, and has declined on small sales to $216. Tamarack, steady at $93. Quincy, more active than last week, nearly all the sales being at $59, a decline of $1. Franklin, has been very firm at $16¾@$16⅞ for round lots, some odd lots selling at $16½. The prospect of a dividend next month has a tendency to keep the price up, and the good reports from the mine warrant the belief that $20 will not look high for this stock the coming year. Osceola, although not very active, is strong, and records an advance from $26@$27¾, with later sales at $27¼. A dividend on this stock is also looked for in the near future. Kearsarge declined to $8, but rallied to-day, and sold at $9¼. A small lot of Atlantic sold at $12, a decline of $1¼ from last sale. Huron has been quite active, advancing from $2¾@$3½ on the good outlook at the mine. This stock will look cheap at $5 before next spring, if all the indications are correct. The market for cheap copper stocks is dull, and the sales have been small; but there is a good demand for them, which eventually will result in higher prices. We note sales: Allouez, $2½@$2¼: Arnold, at 72½c.; National, at $1½; Mesnard, at 50@55c.

The silver stocks have been fairly active, influenced doubtless by the advance in these stocks in New York and San Francisco, but nothing like a boom has struck this market, which is slow to take on in sudden advances of this sort. Boston & Montana opened at $7½, sold at $8, and declined to $6. Bonanza Development Company has been steady at $2@$2¼. Breece, 60@62½c. Dunkin, 40@45c. Catalpa, 35@47½c., with later sales at 42½c. Crescent, 17½@20c. Napa Quicksilver, steady at $1.

At the Mining Exchange, prices for the above stocks have ruled about the same. Bowman Silver declined to ..., on apprehension of further assessments. An active demand for Security Mining and Milling Company has advanced bids to $3 without bringing out much stock. Of the new stocks recently listed, there has been a fair amount of sales at improving prices, and the outlook for business is encouraging.

ROTHWELL'S

TOUR MAP OF THE WYOMING VALLEY.

TOUR LINES TEN FEET APART, VERTICALLY
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FREIGHTS.

The latest actual charters to December 10th, per ton of 2240 pounds:

To	From Philadelphia	From Baltimore.	From New York shipping ports.
Alexandria	.70@.75	.....	.....
Annapolis	.65	.....	.....
Baltimore	.60§	.....	.....
Bangor	1.05*	1.50	.85*
Bath, Me	1.05*	1.30	.82*
Beverly	1.05*	.....	.83*
Boston, Mass	1.05*@1.15*	1.15@1.30	.83*
Bridgeport, Conn.	.....	1.00	.65
Bristol	.....	1.15	.80*
Brooklyn	.....	1.00	.25§
Cambridge, Mass.	1.05*	.....	.85 3*
Cambridgeport	1.05*	.....	.85 3*
Charleston, S. C.	.85	.80@.85	.....
Charlestown,	1.10*	.....	.85 3*
Chelsea	1.05*	.....	.85*
City Point	.....	.....	.85*
Com. Pt., Mass.	1.05*	.....	.85*
E. Boston	1.05*	.....	.83*
East Cambridge	1.05*	.....	.83* 3c.
E. Gr'nwich, R. I.	.....	.....	.80
Fall River	.90*	1.00	80
Galveston	2.35@2.50	2.50	.....
Gardner	1.05*¶	1.15	.....
Georgetown, D. C.	.75	.....	.....
Gloucester	1.05*	.....	.....
Hoboken	.....	.95	.....
Jersey City	.....	.95	.....
Lynn	1.15*	1.28	1.35
Marblehead	1.10*	.....	.....
Milton	1.15*	1.30	.....
Newark	.....	1.15	.....
New Bedford	.90*	1.00	.85
New-Berne	.75	.....	.....
Newburyport	1.20*	1.30	1.00*
New Haven	.....	1.00	.65
New London	.....	1.00	.70
New Orleans	2.00	.....	.....
New York	.90§	1.00	.25§
Newark, N. J.	.....	1.15¶	.....
Newport	.90*	.....	.80
Norfolk, Conn.	.60	.....	.65
Norfolk, Va.	.60	.....	.....
Norwich	.....	1.25¶	.80
Norwalk, Conn	.....	.....	.65
Pawtucket	.....	.....	.75¶
Portland, Me.	1.05*	1.15	.85*
Portsmouth, N. H.	1.15*	1.25	.95*
Portsmouth, Va.	.60	.....	.....
Providence, R. I.	.90*	1.00	.80
Quincy port	1.05*	.....	1.10
Richmond, Va.	.70@.75	.....	.....
Rockport	1.10*	.....	.....
Roxbury, Mass.	1.05*	.....	.....
Saco	1.10†	1.60§	.....
Salem, Mass.	1 10*	1.15@1.20	85*
Savannah	.90	1.00	.....
Somerset	.90*	1.00	.75
Washington	.75	1.00	.....
Williamsb'g, N. Y.	.....	1.00	.....
Wilmington, Del.	.....	1.00	.....
Wilmington, N. C.	.85@.90	1.00	.....

* And discharging. † And discharging and towing. 3c. per bridge extra. § Alongside. ‖ And towing up and down. ¶ And towing. †† Pilotage. ** Below bridge. *** Old B. L.

Important Opportunity.

FOR SALE.—State rights to use the Bietrix Briquette Machinery. By this process, coal-dust, now largely worthless, is so prepared that, by mixing with it about 5 per cent of coal-tar, a fuel superior to lump coal is produced and made into bricks weighing about 2 lbs., 6 lbs., 11 lbs., or 22 lbs. each. These bricks or briquettes are used for domestic purposes, locomotives, steamers, blast-furnaces, etc., with great success.

The actual cost in many cases ought not to exceed the following for an output of 100 tons in 20 hours:

Office expenses per ton Briquettes	.04
Depreciation and interest	.05
Repairs, oil, etc	.03
Labor	.10
Coal-dust	.10
Tar	.30
Total cost per ton	.62

Where the dust is not made into briquettes at the coal mine, cost of freight on it must be added.

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Nearly 80 of these machines are in use in Europe, and the names of all the buyers will be given.

The total capacity of the Bietrix system has grown from nothing in 1878 to nearly 3,500,000 tons yearly in 1886. Some firms have a number of these plants, and make 200,000 tons and upward yearly. In many cases, parties buy the coal-dust and make the briquettes for general sale; in other cases, the plants have been taken by coal-mine owners themselves, or by railroads, etc. The briquettes are superior to lump coal, and do not deteriorate so much when exposed to the weather. A large field and handsome profits in this business await enterprising parties in this country. Address agency,

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Room 22, 8th Floor, Mills Building, New York City.

P. S.—Parties also wanted to manufacture the above. Each plant, with motive power, weighs from about 50 to 120 tons, according to size. A SPECIAL OPPORTUNITY will be given the first parties who purchase a plant for use in the United States.

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100 STEEL GUN-FORGINGS AND ARMOR—Proposals will be received by the Secretary of the Navy, Navy Department, Washington, D. C., until March 15th, 1887, for about 1310 tons of steel gun-forgings, and about 4500 tons of steel armor plates.

138 SUPPLIES—PROPOSALS WILL BE received by Lieut.-Col. O. M. Poe, U. S. Engineer Office, 34 West Congress Street, Detroit, Mich., until December 13th, for furnishing one dredge, one tug, and two dump scows; iron drift bolts and spikes; framing, placing, filling, and completing crib piers; and furnishing and placing puddling clay.

139 MACHINERY AND SUPPLIES—PROPOSALS will be received by the Piedmont Reduction Company, of North Carolina, 115-123 Chestnut Street, Newark, N. J., for the following articles: Fire-bricks and tiles, fire-clay, red bricks, lime, and cement, ore-breaker and crushing-rolls, edge-runner mixing mill, iron-work for water-jacket blast-furnace, blower and air pipes, slag-pots, molds, and tools, blacksmith's forge and tools.

142 EXCAVATING—PROPOSALS WILL be received by Lieut.-Col. O. M. Poe, U. S. Engineer Office, 34 West Congress street, Detroit, Mich., until December 16th, for excavating at Middle Neebish, Hay Lake Channel, Michigan.

143 DREDGING—PROPOSALS WILL BE received by Lieut.-Col. D. C. Houston, U. S. Engineer Office, Room 59, Army Building, corner Houston and Greene streets, New York, until December 18th, for dredging in Stamford Harbor, Conn.

146 PROPOSALS WILL BE RECEIVED AT the War Department, Surgeon-General's Office, Washington, D. C., until December 20th, for the construction and erection of an iron book-stack and for cast-iron file cases.

147 DREDGING—PROPOSALS WILL BE RECEIVED by Capt. James B. Quinn, U. S. A., Duluth, Minn., until December 13th, for dredging in Superior Bay and Saint Louis Bay, Wis., and in the harbor of Grand Marais, Minn.

148 DREDGING—PROPOSALS WILL BE received by Lieut. W. M. Black, U. S. Engineer Office, Jacksonville, Fla., until December 22d, for dredging in Apalachicola Bay and at the mouth of the Carabello River, Fla.

149 STEAM-BOILER—PROPOSALS WILL be received by Major W. H. Heur, U. S. Engineer, New Orleans, La., until December 18th, for a steam-boiler for U. S. Steamer Albatross.

150 CABLE RAILROAD SUPPLIES—PROPOSALS will be received by Henry Martin, President of the Mount Auburn Cable Railroad Company, Twelfth and Main streets, Cincinnati, Ohio, until December 15th, for two 350 horse-power engines, two sections of cable-driving machinery, a steel wire cable, and 900 cast-iron conduit sheaves.

151 INCANDESCENT ELECTRIC LIGHTING Plants—Proposals will be received by the Commissioners for Hospitals for Insane, Governor's Office, Indianapolis, Ind., until January 4th, for three (3) incandescent electric lighting plants of about 600 lights each.

152 PIPES, ETC., FOR WATER-WORKS—Proposals will be received by the Trustees of Water-Works, Franklin, Ohio, until December 23d, 1886, for furnishing 564 tons of 10, 8, 6, and 4-inch cast-iron water-pipe; 26,000 pounds of special castings for above pipe; 44 double-seat water-stop valves for 10, 8, 6, and 4-inch pipe; 59 double-nozzle fire-hydrants; 44 stop-valve boxes; together with the laying of above pipe and special castings, and setting of stop-valves, fire-hydrants, and stop-boxes.

153 STONE AND BRICK-WORK—PROPOSALS will be received by the Supervising Architect, Washington, D. C., until January 3d, 1887, for all the stone-work and brick-work of the superstructure of the extension of the Court-House, etc., at Des Moines, Ia.

154 DREDGING—PROPOSALS WILL BE received by Capt. W. H. Bixby, U. S. Engineers, Wilmington, N. C., until January 4th, 1887, for dredging in Cape Fear River, N. C.

155 WATER-WORKS—PROPOSALS WILL be received by Ed. J. Mastin, Mayor, Huntsville, Ala., for 1000 feet of 8-inch pipe and about 6000 feet of 6-inch pipe, engine for pumping water, and building a new reservoir.

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